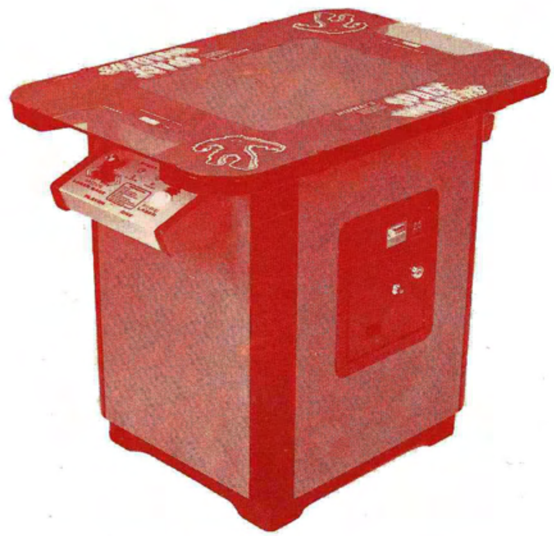
GAME NO. 852 & 870
JANUARY, 1980

MIDWAY'S SPACE INVADERS DELUXE

PARTS AND OPERATING MANUAL



NO. 852 UP-RIGHT



NO. 870 COCKTAIL

MIDWAY MFG. CO.
A BALLY COMPANY
10750 WEST GRAND AVENUE
FRANKLIN PARK, ILLINOIS 60131
U.S.A.

PHONE: (312) 451-1360 CABLE ADDRESS: MIDCO TELEX NO.: 72-1596

TABLE OF CONTENTS

WARNING

THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.

GENERAL INSTRUCTIONS FOR "DELUXE SPACE INVADERS"

INSTALLATION

1. Remove shipping cleats located on bottom of cabinet.
2. Install 4 provided leg levelers to bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on top of the cabinet. Plug into A.C. only, 115 volts, 60 cycles. In low line areas (105 volts or less), a boost in the output voltage of the transformer may be obtained by removing the wire from the 115 volt tap of the transformer and rewiring it to the 105 volt position.

VOLTAGE CONTROL POTS

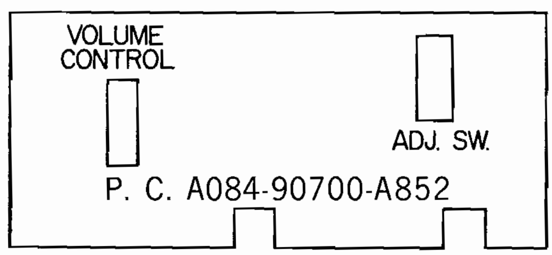
Located on power supply board (P.C. A082-90400-H000) and are preset at the factory. These pots should not be tampered with unless the Distributor Service Department is contacted.

MASTER VOLUME CONTROL

Located on game logic board (P.C. A084-90700-A852) controls the volume of all sounds and may be varied as desired by rotating pots.

ADJUSTMENT SWITCHES

Located on game logic board (A084-90700-A852) and may be adjusted as indicated on separate instruction sheet in back box area.



TO REMOVE CONTROL PANEL FOR SERVICE

1. Open coin box door.
2. Unplug control panel jack located to the left of coin box opening.
3. Unlatch (2) clamps located on each side of cabinet.
4. Remove control panel for service.

HIGH SCORE AND NAME DISPLAY PROGRAM

1. Place switch #2 located on Game Logic Board (P.C. A084-90700-A852) in "OFF" position.
2. Close coin switch to display one credit on screen.
3. Depress One Player Select Button. "Preset Mode" will be displayed on screen.
4. Depress One Player Select Button again to increase score until previous Hi Score is beaten.
5. Depress Fire Button to start game. When all lasar bases have been destroyed, the alphabet will be displayed on the screen. A new name may now be programmed on the screen as indicated by instructions on Control Panel.
6. Place switch #2 located on Game Logic Board (P.C. A084-90700-A852) in "ON" position to reestablish game mode.

   NOTE: To reset Hi-Score (to 5000) and Name Display, depress "ON-OFF" switch.

M051-00852-A009

GENERAL INSTRUCTIONS FOR DELUXE "SPACE INVADERS" COCKTAIL TABLE

INSTALLATION

1. Remove shipping cleats located on bottom of cabinet.
2. Install four (4) provided leg levelers to bottom of cabinet and level cabinet
3. The power is controlled by a switch located on the bottom of the cabinet. Plug into A.C. only, 115 volts, 60 cycles. In low line areas (105 volts or less), a boost in the output voltage of the transformer may be obtained by removing the wire from the 115 volt tap of the transformer and rewiring it to the 105 volt position.

VOLTAGE CONTROL POTS

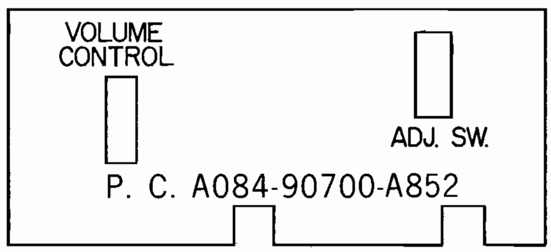
Located on Power Supply Board (P.C. A082-90400-H000) and are preset at the factory. These pots should not be tampered with unless the Distributor Service Department is contacted.

MASTER VOLUME CONTROL

Located on Game Logic Board (P.C. A084-90700-A852) controls the volume of all sounds and may be varied as desired by rotating pot.

ADJUSTMENT SWITCHES

Located on Game Logic Board (P.C. A084-90700-A852) and may be adjusted as indicated on separate instruction sheet in cabinet.



LINE VOLTAGE SAFETY SWITCH

A line voltage safety switch has been provided for your protection. It is located in the cabinet on the left side of the coin door. When the coin door is opened the circuit to the line voltage is interrupted. To restore power (when servicing), pull switch fully out.

TO SERVICE GAME LOGIC BOARD

The game logic board assembly is easily serviced by removing rear access door panel.

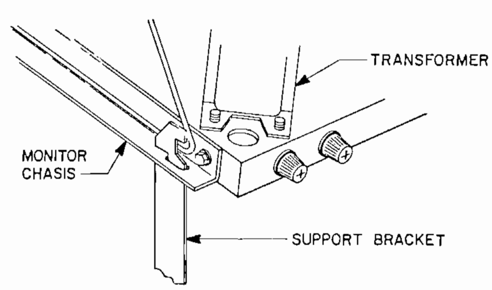
HIGH SCORE AND NAME DISPLAY PROGRAM

1. Place switch #2 located on Game Logic Board (P.C. A084-90700-A852) in "OFF" position.
2. Close coin switch to display one credit on screen.
3. Depress One Player Select Button. "Preset Mode" will be displayed on screen.
4. Depress One Player Select Button again to increase score until previous Hi Score is beaten.
5. Depress Fire Button to start game. When all lasar bases have been destroyed, the alphabet will be displayed on the screen. A new name may now be programmed on the screen as indicated by instructions on Control Panel.
6. Place switch #2 located on Game Logic Board (P.C. A084-90700-A852) in "ON" position to reestablish game mode.

   NOTE: To reset Hi-Score (to 5,000) and Name Display, depress "ON-OFF" switch.

TO SERVICE MONITOR

1. Open coin box door.
2. Release two clamps located above coin door opening. CAUTION: NEVER RELEASE CLAMPS UNLESS THE LINE VOLTAGE IS INTERRUPTED VIA SAFETY SWITCH.
3. Rotate top panel on its hinges to an upright position.
4. Place Monitor Support Bracket (located on left cabinet wall) in provided hole in monitor chassis.
5. To restore power to monitor, pull safety switch fully out.



ADJUSTMENT SWITCHES

	SW. 1
COIN INFORMATION DISPLAYED ON SCREEN	ON
COIN INFORMATION IS NOT DISPLAYED ON SCREEN	OFF

GAME – RECORD NAME

	SW. 2
GAME MODE	ON
RECORD NAME (SEE GENERAL INSTRUCTIONS)	OFF

LASER BASES

	SW. 4
3 LASER BASES PER GAME	ON
4 LASER BASES PER GAME	OFF

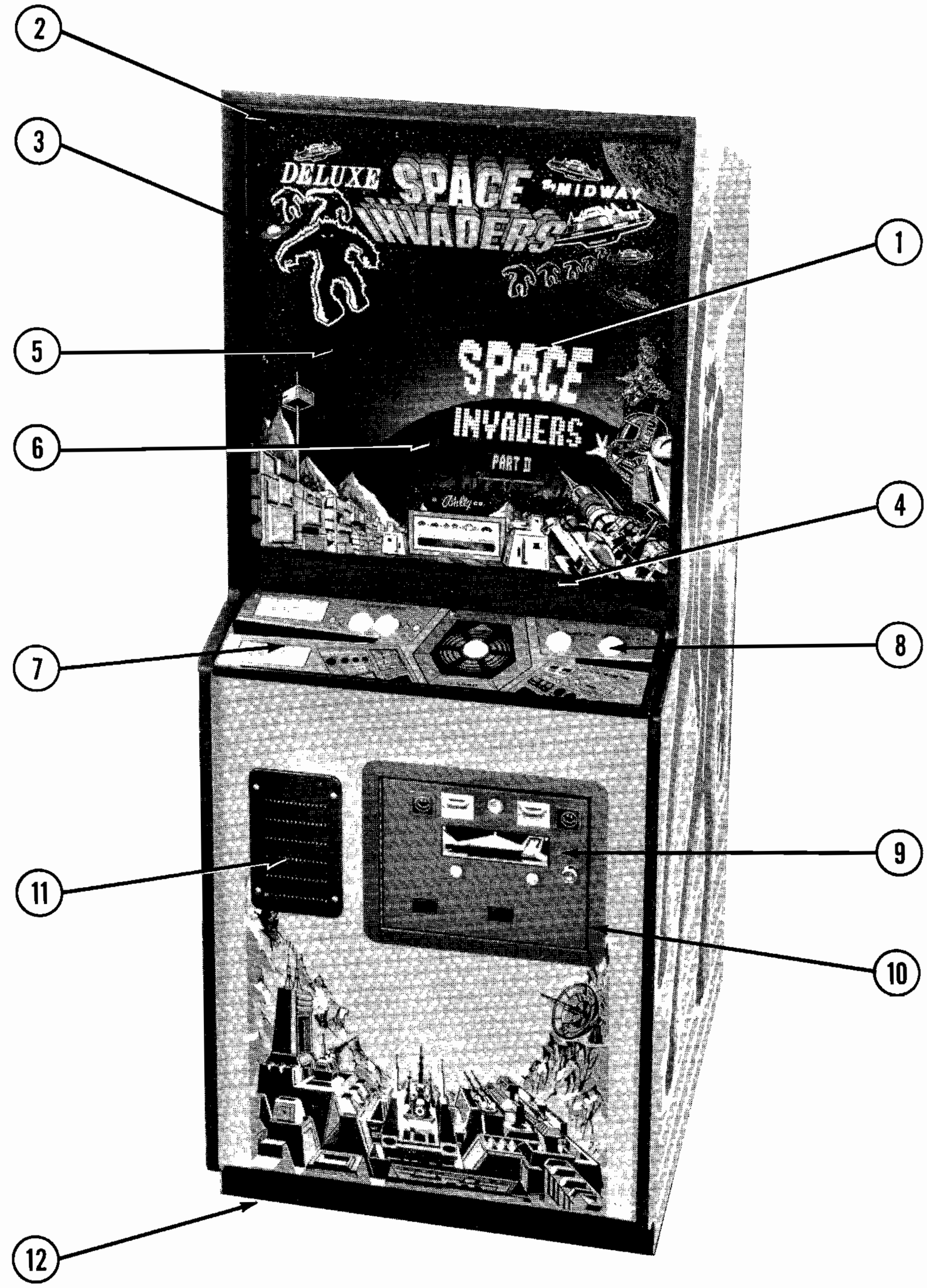
GAME SELECTION

	SW. 5	SW. 6	SW. 7
UPRIGHT MODEL	ON	ON	ON
COCKTAIL MODEL	OFF	OFF	OFF

NOTE: SWS. 3 AND 8 ARE NOT USED THERE IS NO RAM/ROM TEST

M051-00852-A005

NO. 852 – SPACE INVADERS DELUXE UPRIGHT – PICTURE



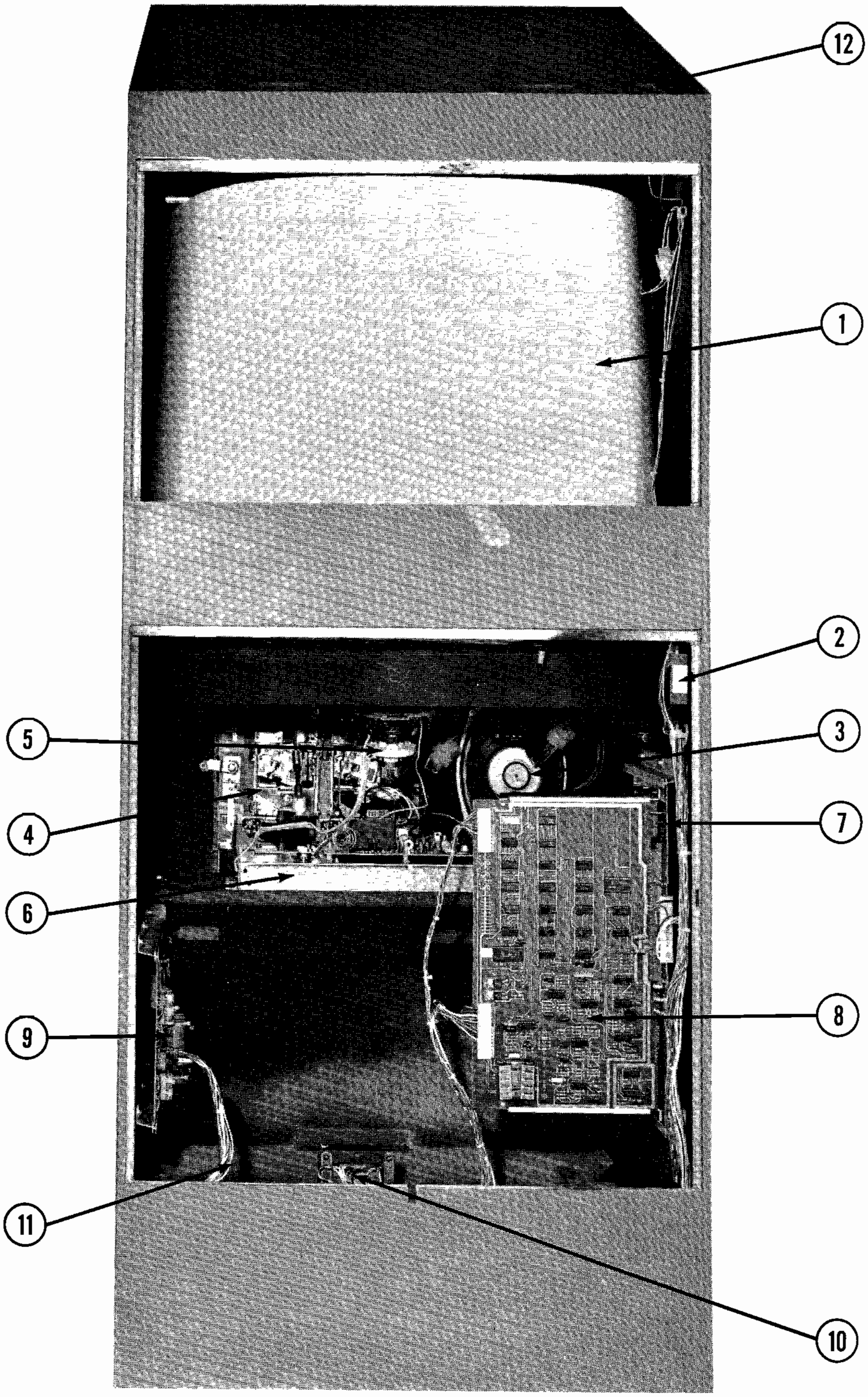
MIDWAY MFG. CO.
A BALLY COMPANY

NO. 852 – SPACE INVADERS DELUXE UPRIGHT – PICTURE

ORDER BY PART NUMBER ONLY

ITEM	PART No	DESCRIPTION
1	0852-00901-01XF	SEE THRU DISPLAY – 25-5/16" x 24-7/8" x 3/16"
2	0537-00903-0015	GLASS CHANNEL 24-1/4" LG.
3	0537-00903-0011	GLASS CHANNEL 26-1/4" LG. (2 REQ'D.)
4	0629-00902-0100	GLASS LIFT CHANNEL – 24" LG.
5	0852-00903-00XF	BACKGROUND SCENERY CARD
6	0852-00902-00XF	PLANET ARTWORK
7	0852-00907-00XF	CONTROL SHELF OVERLAY
	0017-00101-0639	#8 - 32 x 1-1/4 CARRIAGE BOLTS (6 REQ'D.)
	0017-00104-0022	#8 WASHER (6 REQ'D.)
	0017-00103-0061	#8 - 32 HEX LOCKNUT SEMS. (6 REQ'D.)
8	A739-00012-0000	PUSH BUTTON ASSY. (5 REQ'D.)
9	A090-00002-2001	DOUBLE ENTRY COIN DOOR ASSY.
	0017-00003-0102	COUNTER METER 6 V., 4 W.
10	0090-00002-02GR	DOUBLE ENTRY COIN DOOR FRAME ASSY.
	0017-00101-0555	#6 - 32 x 5/16 HEX HD. S.M.S. (3 REQ'D.)
11	0017-00009-0393	BLK. SPEAKER GRILL W/4 1-1/2" SCR.
	0017-00003-0187	6" x 9" SPEAKER 8 OHM, 9W.
12	0017-00102-0048	LEG LEVELERS (4 REQ'D.)
	0017-00103-0026	LEG LEVELER NUTS (4 REQ'D.)
		NOT SHOWN LIST
	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0603-00131-0000	STRIKE (2 REQ'D.)
	0739-00902-0000	MIRROPANE MIRROR 24-13/16 x 23-3/4 x 1/4
	0739-00102-0000	GLASS LOCK BRKTS. (2 REQ'D.)
	0739-00905-0000	CARDBOARD BEZEL
	0739-00906-0000	SCREEN OVERLAY 13" x 4-1/2"
	A739-00007-0000	DISPLAY INSERT ASSY.
	0017-00031-0002	LAMP SOCKETS (5 REQ'D.)
	0017-00003-0052	LAMPS (5 REQ'D.)
	0017-00041-0037	SPONGE RUBBER TAPE – 24" LG.

NO. 852 – SPACE INVADERS DELUXE – BACK VIEW PICTURE

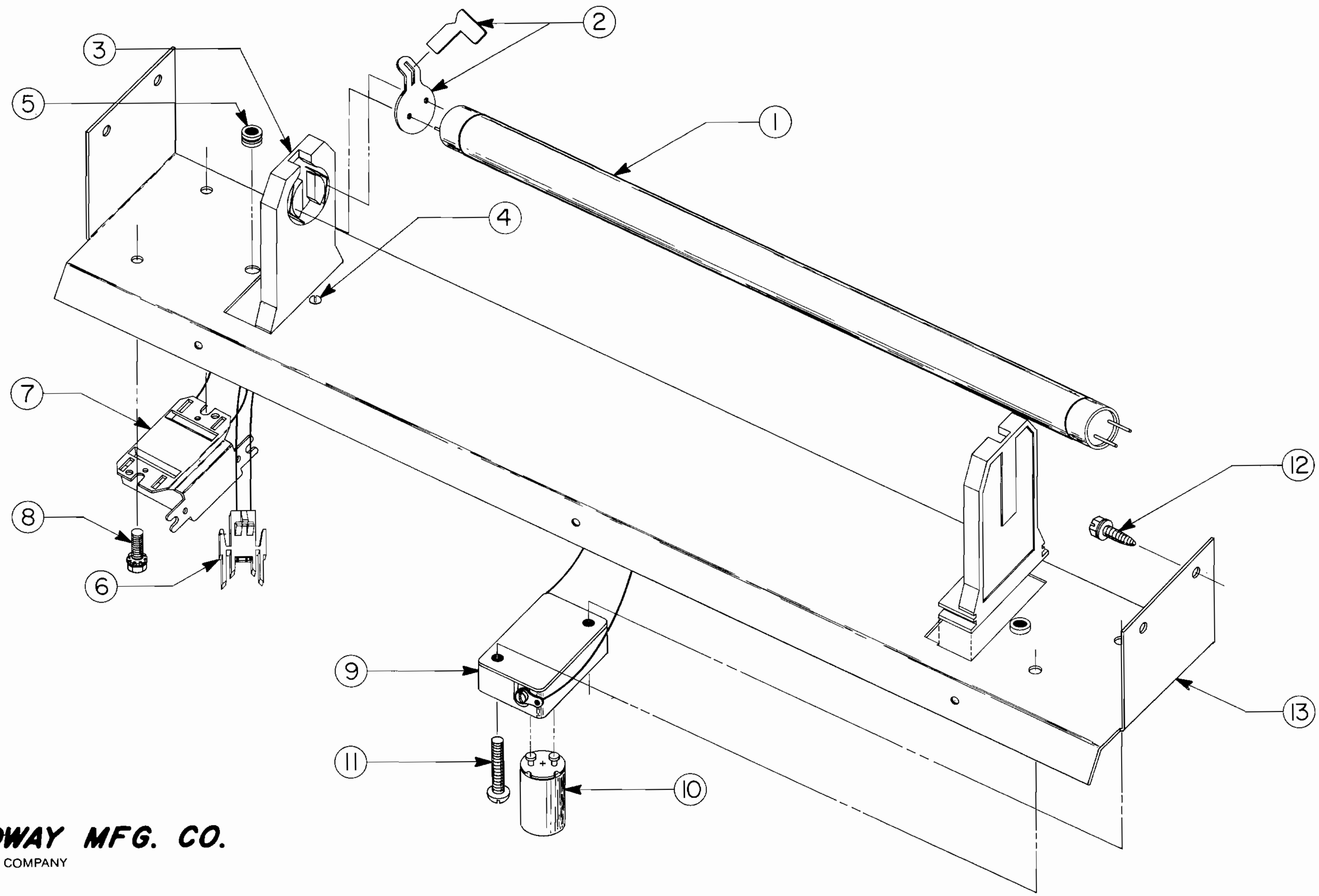


NO. 852 – SPACE INVADERS DELUXE – BACK VIEW PICTURE

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0852-00903-00XF	BACKGROUND SCENERY CARD
2	0017-00003-0225	CHEAT INTERLOCK SWITCH 125 V., 10 A.
	0625-00133-00XF	INTERLOCK SW. MTG. BRKT.
3	0017-00003-0187	6" x 9" SPEAKER 8 OHM, 9 W.
4	A090-00002-2001	DOUBLE ENTRY COIN DOOR ASSY.
5	0017-00003-0164	19" CATHODE RAY TUBE (C.R.T.)
6	0017-00003-0212	19" MONITOR CHASSIS W/YOKE
	0592-00104-0100	CHASSIS MTG. BRKT. – R.H.
	0592-00104-0200	CHASSIS MTG. BRKT. – L.H.
	0161-00100-0000	T.V. MTG. WASHER (4 REQ'D.)
	0017-00101-0639	#8 - 32 x 1-1/4 CARRIAGE BOLT (4 TUBE, 4 CHASSIS)
	0017-00104-0022	#8 WASHER (4 TUBE, 4 CHASSIS)
	0017-00103-0061	#8 - 32 HEX LOCKNUT SEMS. (4 TUBE, 4 CHASSIS)
	A739-00010-0000	DAG SPRING ASSY.
	3000-17155-0000	GROUND STRAPS
	0080-00101-0000	HIGH VOLTAGE SHIELD
7	A084-90000-L852	MOTHER BOARD ASSY.
8	A084-90700-A852	GAME BOARD ASSY.
	0597-00012-0100	P.C. SUPPORT BRKT. ASSY. – R.H.
	0597-00012-0200	P.C. SUPPORT BRKT. ASSY. – L.H.
9	A082-90400-H000	POWER SUPPLY BOARD ASSY.
	0624-00902-0100	P.C. SUPPORT BRKT. – 12" (4 REQ'D.)
	0624-00902-0300	P.C. SUPPORT BRKT. – 2-1/2" (4 REQ'D.)
10	A852-00010-0000	TRANSFORMER BOARD ASSY.
11	A852-00018-0000	MASTER CABLE ASSY'
12	0586-00036-0000	ON-OFF SWITCH
	0567-00106-0100	SWITCH MTG. BRKT.

NO. 852 – SPACE INVADER DELUXE – FLUORESCENT FIXTURE ASSEMBLY



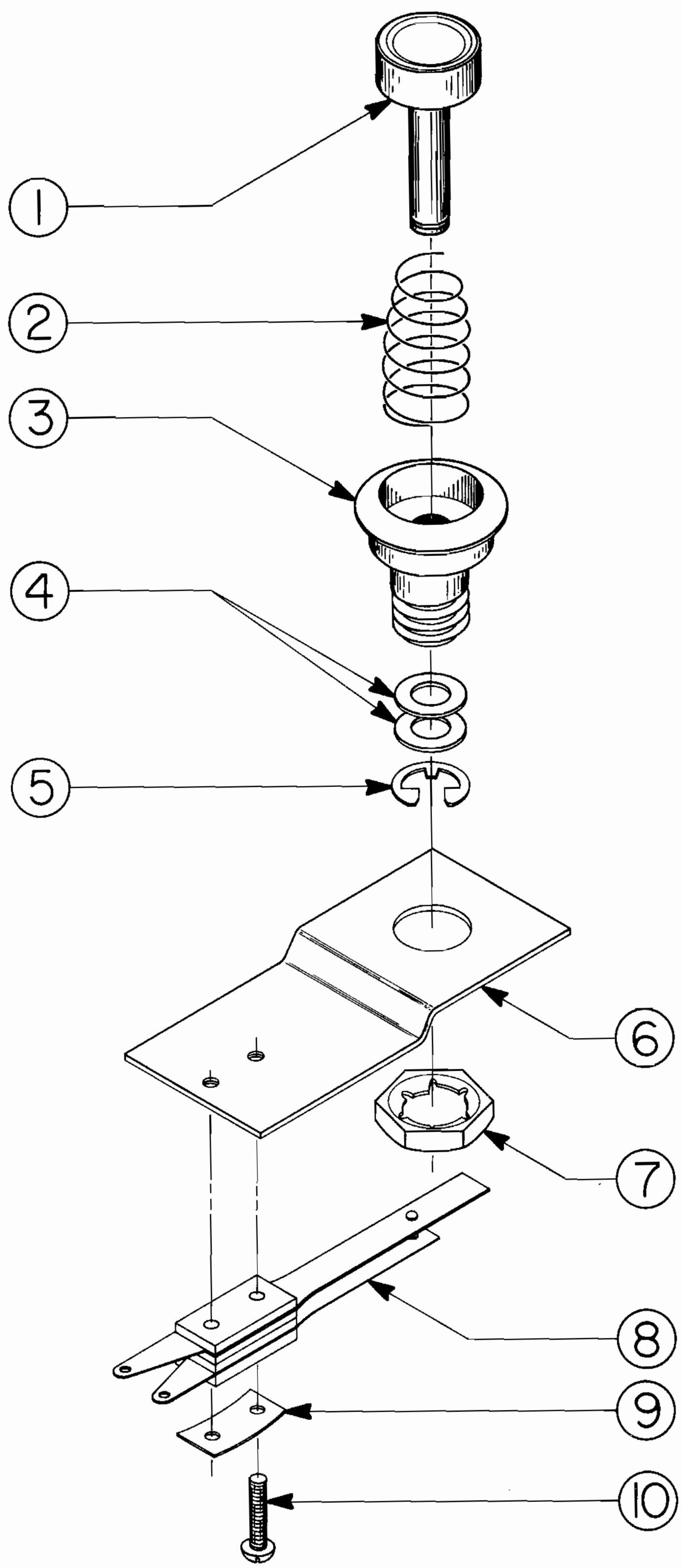
MIDWAY MFG. CO.
A BALLY COMPANY

NO. 852 – SPACE INVADER DELUXE – FLUORESCENT FIXTURE ASSEMBLY

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0017-00003-0046	18" FLUORESCENT LAMP (BLACK LIGHT)
2	0017-00021-0005	FLUORESCENT LOCKS (2 REQ'D.)
3	0017-00031-0036	LAMP HOLDERS (2 REQ'D.)
4	0017-00101-0573	#6 - 32 x 1/2 SLT. RND. HD. M.S. (2 REQ'D.)
5	0017-00041-0013	GROMMETS (2 REQ'D')
6	0017-00021-0096	2 TERMINAL JACK – FEMALE
7	0017-00003-0026	BALLAST
8	0017-00101-0593	#8 - 32 x 1/4 PAN HD. EXT. SEMS. M.S. (2 REQ'D.)
9	0017-00021-0079	STARTER HOLDER
10	0017-00003-0019	STARTER
11	0017-00101-0528	#5 - 40 x 3/4 R.H.M.S. (2 REQ'D.)
12	0017-00101-0025	#8 x 1/2 HEX HD. WD. SCR. (4 REQ'D.)
13	0739-00100-0000	FLUORESCENT BRKT.
		NOT SHOWN LIST
	0852-00902-00XF	PLANET ARTWORK
	0017-00101-0598	#8 - 32 x 5/16 HEX HD. S.T.M.S. (3 REQ'D.) (MOUNTS PLANET ARTWORK TO FLUOR. BRKT.)

NO. 852 – SPACE INVADERS DELUXE – PUSH BUTTON ASSY.



NO. 852 – SPACE INVADERS DELUXE – PUSH BUTTON ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0017-00009-0384	BUTTON
2	0010-00593-0000	SPRING
3	0017-00009-0376	BUTTON HOUSING
4	0017-00104-0028	FLAT WASHER (2 REQ'D.)
5	0017-00100-0025	E-RING
	A739-00012-0000	PUSH BUTTON ASSY. (FIRST 5 ITEMS)
6	0586-00107-0000	MOUNTING BRKT.
7	0017-00103-0054	PAL NUT
8	A739-00016-0000	SWITCH ASSY.
9	0020-00202-0000	SWITCH PLATE
10	0017-00101-0526	#5 - 40 x 9/16 PHIL. HD. M.S. (2 REQ'D.)
		NOTE: 5 PUSH BUTTONS PER GAME

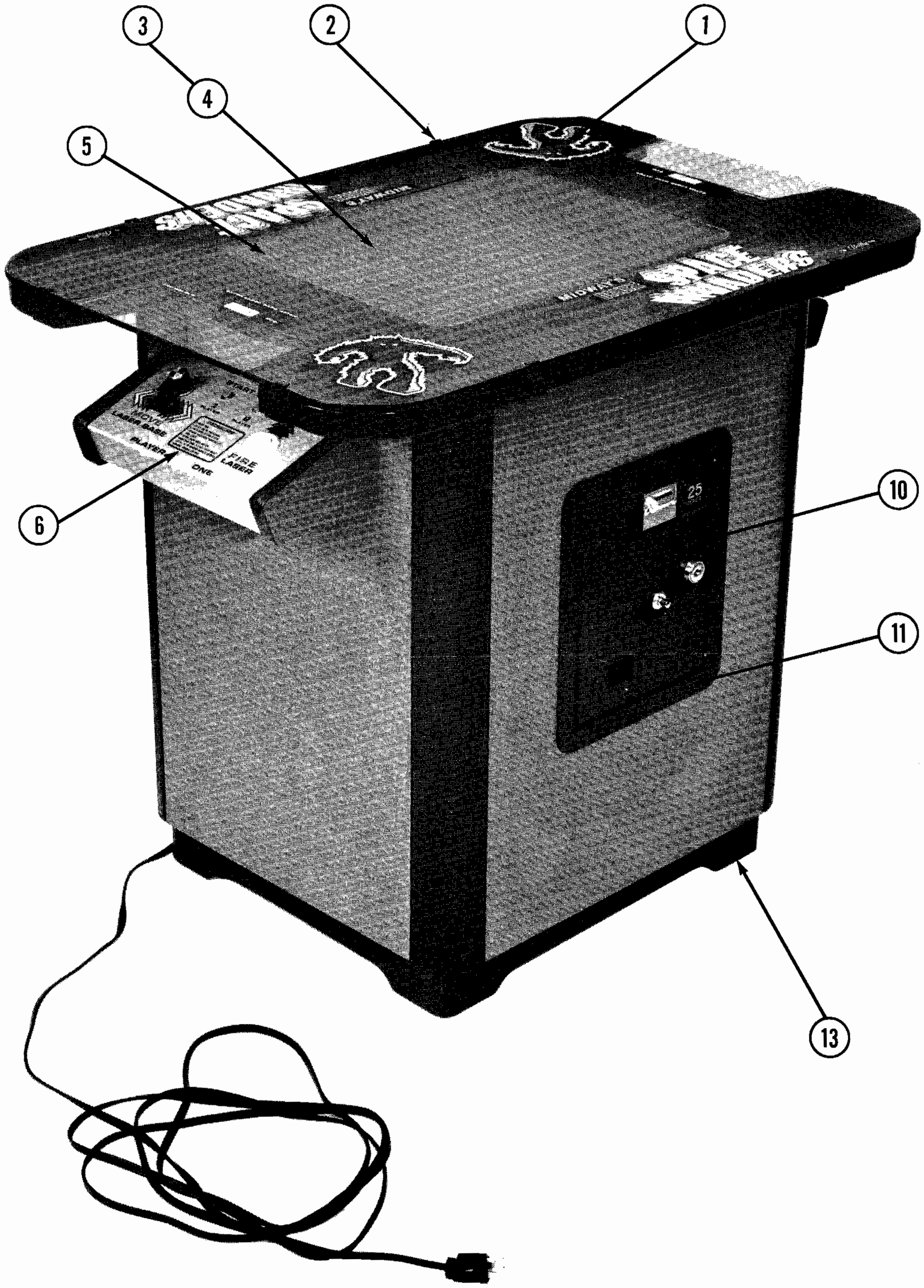
NO. 852 – SPACE INVADERS DELUXE UPRIGHT – ADDITIONAL PARTS LIST

ORDER BY PART NUMBER ONLY

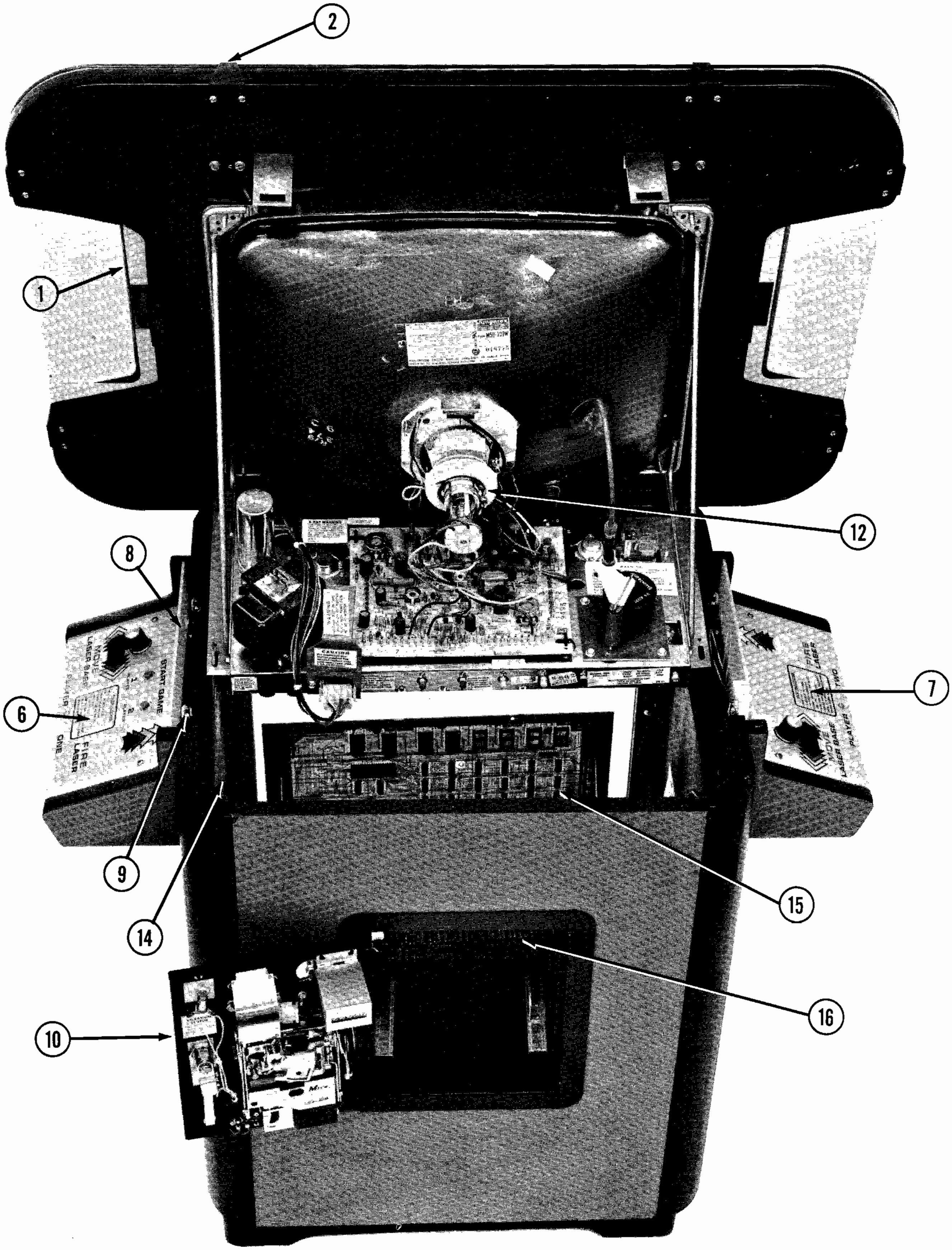
ITEM	PART Nº	DESCRIPTION
	A852-00003-0000	LOWER BACK DOOR ASSY.
	A852-00004-0000	UPPER BACK DOOR ASSY.
	A097-00001-0000	LOCK ASSY. (1 UPPER, 1 LOWER)
	0618-00117-0000	VENT SCREEEN (2 UPPER, 2 LOWER)
	A623-00013-0000	CASH BOX COVER ASSY.
	A623-00110-0000	CASH BOX ASSY.
	A624-00001-0000	CASH BOX GUIDE BRKT. ASSY.
	0624-00101-0000	CASH BOX SIDE CHANNEL
	0017-00101-0628	#8 - 32 x 3/4 CARRIAGE BOLTS (4 REQ'D.)
	0017-00104-0022	#8 STEEL WASHER (4 REQ'D.)
	0017-00103-0061	#8 - 32 LOCKNUT SEMS. (4 REQ'D.)
	0017-00009-0009	TURN BUTTONS (2 REQ'D.)
	M052-00190-0001	TRANSPARENT TAPE (ORANGE) – 13" x 1"

MIDWAY MFG. CO.
A BALLY COMPANY

NO. 870 – SPACE INVADERS DELUXE COCKTAIL – PICTURE



NO. 870 – SPACE INVADERS DELUXE COCKTAIL – PICTURE



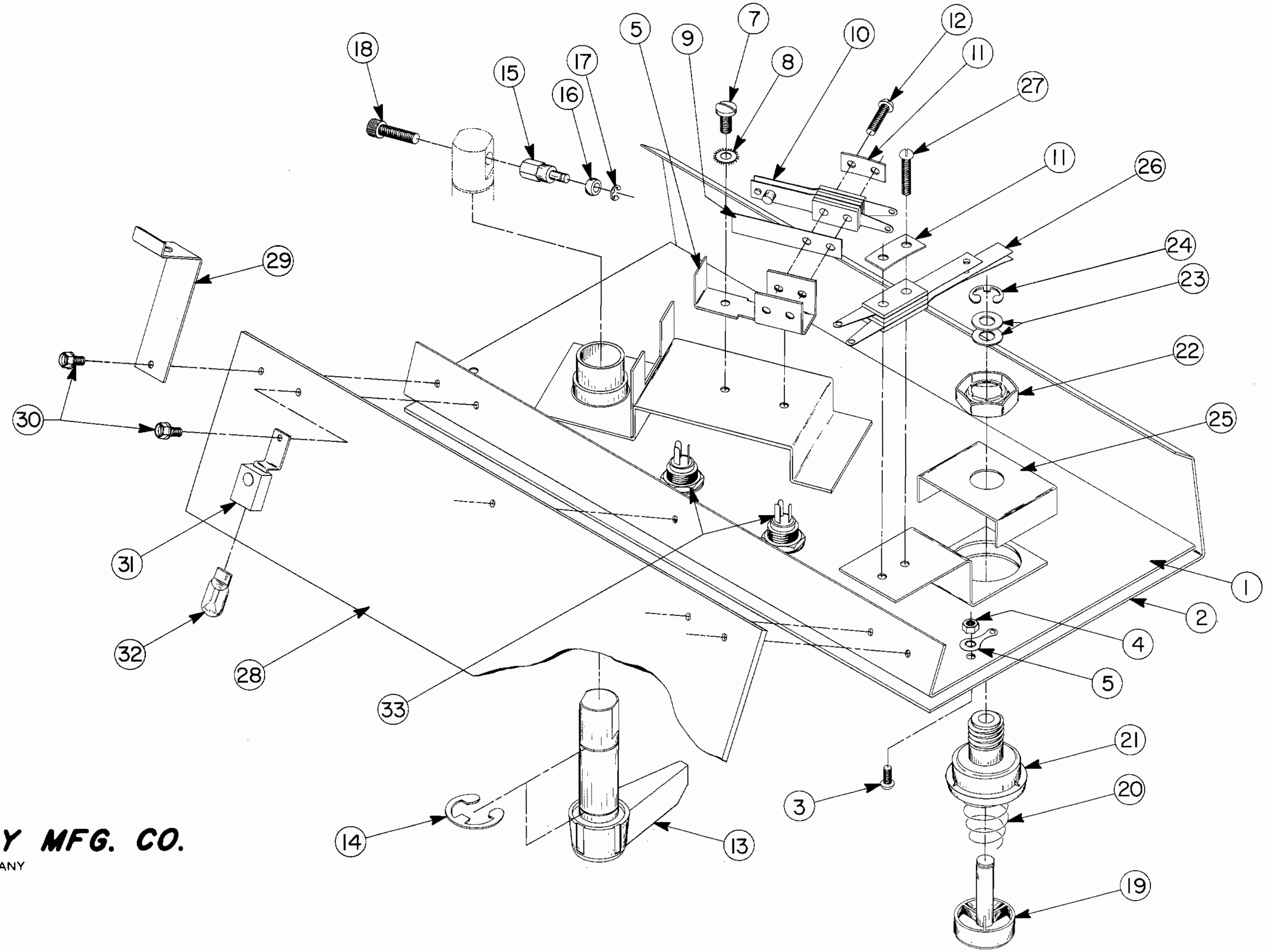
MIDWAY MFG. CO.
A BALLY COMPANY

NO. 870 – SPACE INVADERS DELUXE COCKTAIL – PICTURES

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0870-00900-00XF	GLASS TOP
2	0775-00104-00XF	GLASS CLIPS (8 REQ'D.)
	0017-00101-0742	#8 x 1/2 PHL. TRUSS HD. S.M.S. (16 REQ'D.)
3	0851-00905-0000	PLEXI SCREEN OVERLAY
4	0870-00901-0000	RED - YELLOW - GREEN SCREEN OVERLAY
5	0870-00902-0000	T.V. BEZEL (CARDBOARD)
6	0775-00106-00XF	MAIN ESCUTCHEON
7	0775-00107-00XF	ESCUTCHEON – R.H.
	A775-00003-0000	SHELF PLATE ASSY. (2 REQ'D.)
8	0775-00901-0000	LIGHT SHIELD (2 REQ'D.)
	0775-00112-00XF	BKRT. DECAL (2 REQ'D.)
	0775-00100-00XF	SHELF BRKT. (4 REQ'D.)
	0017-00101-0017	#6 x 1/2 HEX HD. WD./W BLK. S.M.S. (4 REQ'D.)
9	0017-00003-0219	LAMP 14V. (4 REQ'D.)
	0017-00031-0044	LIGHT SOCKET (4 REQ'D.)
	0017-00101-0014	#6 x 1/2 HEX HD. WD./W S.M.S. (8 REQ'D.)
10	A090-00058-0000	FRONT DOOR ASSY. W/COIN METER
11	0090-00002-01BK	FRONT DOOR FRAME
12	0017-00003-0242	MONITOR & CHASSIS ASSY.
	0851-00100-00XF	TUBE BRKT. (4 REQ'D.)
	0017-00101-0082	#10 x 3/4 HEX HD. S.M.S. (8 REQ'D.)
13	0017-00102-0048	LEG LEVELERS (4 REQ'D.)
	0017-00103-0026	LEG LEVELER NUTS (4 REQ'D.)
14	0749-00105-00XF	PROP (ORANGE SUPPORT BRKT.)
15	A084-90000-L852	MOTHER BOARD ASSY.
16	A084-90700-A852	GAME BOARD ASSY.
		NOT SHOWN LIST
		SPEAKER ASSY.
	0017-00003-0187	SPEAKER (1 REQ'D.)
	0549-00128-00XF	SPEAKER GRILL (1 REQ'D.)
	0017-00041-0576	SPEAKER GASKET (1 REQ'D.)
	0547-00035-00XF	SPEAKER BEZEL (1 REQ'D.)
	0017-00101-0642	#8 - 32 x 1-1/2 CARRIAGE BOLTS (4 REQ'D.)
	0017-00103-0061	#8 - 32 HEX NUT SEMS. (8 REQ'D.)
	0017-00009-0393	VENT GRILL (1 REQ'D.)
	0017-00101-0639	#8 x 32 x 1-1/4 CARRIAGE BOLTS (4 REQ'D.)
		FAN ASSY.
	0017-00003-0222	FAN
	0775-00110-00XF	FAN PLATE
	0870-00100-00XF	VENT SCREEN
	0017-00101-0347	#6 - 32 x 1/2 PHIL. R.H.M.S. SEMS. (4 REQ'D.)
	0017-00104-0009	#6 EXT. WASHER (4 REQ'D.)
	0017-00103-0005	#6 - 32 HEX NUT (4 REQ'D.)
	0017-00101-0026	#8 x 5/8 SLOT. HEX HD. S.M.S. (4 REQ'D.)
	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0017-00101-0025	#8 x 1/2 HEX HD. S.M.S. (4 REQ'D.)
	0610-00132-0000	STRIKE (2 REQ'D.)
	0017-00101-0028	#8 x 3/4 HEX HD. S.M.S. (4 REQ'D.)
	0017-00009-0439	HINGE (TOP ASSY.) (2 REQ'D.)
	0017-00101-0082	#10 x 3/4 HEX HD. S.M.S. (4 REQ'D.)
	0017-00101-0014	#6 x 7/8 OVAL HD. WD. SCR. (2 REQ'D.)
	A749-00005-0000	INTERLOCK SWITCH ASSY.
	0017-00101-0026	#8 x 5/8 HEX HD. S.M.S. (3 REQ'D.)
	A627-00066-0000	ON-OFF SWITCH ASSY.
	0017-00101-0017	#6 x 1/2 HEX HD. S.M.S. (6 REQ'D.)

NO. 870 – SPACE INVADER DELUXE COCKTAIL – CONTROL SHELF ASSY.



MIDWAY MFG. CO.
A BALLY COMPANY

NO. 870 – SPACE INVADER DELUXE COCKTAIL – CONTROL SHELF ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	A775-00003-0000	SHELF PLATE ASSY.
2	0775-00106-00XF	ESCUTCHEON – MAIN
2	0775-00107-00XF	ESCUTCHEON – R.H. PLAYER 2
3	0017-00101-0077	#6 - 32 x 5/16 PHIL. PAN HD. M.S. (2 REQ'D.)
4	0017-00103-0005	#6 - 32 HEX NUT (2 REQ'D.)
5	0017-00021-0002	#6 SOLDER LUG
6	0775-00101-00XF	SWITCH MTG. BRKT.
7	0017-00101-0517	#5 - 40 x 1/4 SLOT PAN HD. M.S. (2 REQ'D.)
8	0017-00104-0009	#6 EXT. LOCK WASHER (2 REQ'D.)
9	0020-00240-0010	TENSION LEAF, 010 (2 REQ'D.)
10	A775-00005-0000	SWITCH ASSY. (2 REQ'D.)
11	0020-00202-0000	SWITCH PLATE (3 REQ'D.)
12	0017-00101-0525	#5 - 40 x 9/16 SLOT RD. HD. M.S. (4 REQ'D.)
13	A869-00006-0000	KNOB & SHAFT ASSY.
14	0017-00100-0050	1/2 E-RING (2 REQ'D.)
15	0775-00701-00XF	POST
16	0775-00902-0000	ROLLER
17	0017-00100-0015	5/32 E-RING
18	0017-00101-0720	#10 - 32 x 3/4 SOCKET HD. CAP SCREW
19	0017-00009-0384	BUTTON
20	0010-00593-0000	SPRING
21	0017-00009-0376	HOUSING
22	0017-00103-0054	PAL NUT 5/8 – 11
23	0017-00104-0028	FLAT WASHER (2 REQ'D.)
24	0017-00100-0025	1/4 E-RING
	A739-00012-0000	PUSH BUTTON ASSY. (ITEMS 19-24)
25	0775-00105-00XF	SPACER
26	0586-00036-0000	PUSH BUTTON SWITCH ASSY.
27	0017-00101-0522	#5 - 40 x 7/16 SLOT RD. HD. M.S. (2 REQ'D.)
28	0775-00901-0000	LIGHT SHIELD
29	0775-00100-00XF	SHELF MTG. BRKT. (2 REQ'D.)
30	0017-00101-0014	#6 x 1/2 SLOT HEX HD. M.S. (5 REQ'D.)
31	0017-00031-0044	LAMP SOCKET (2 REQ'D.)
32	0017-00003-0219	LAMP #194 14V. 27A WEDGE (2 REQ'D.)
33	0017-00032-0051	BUTTON SWITCH (MAIN CONTROL ONLY) (2 REQ'D.)

NO. 870 – SPACE INVADER DELUXE COCKTAIL – ADDITIONAL PARTS LIST

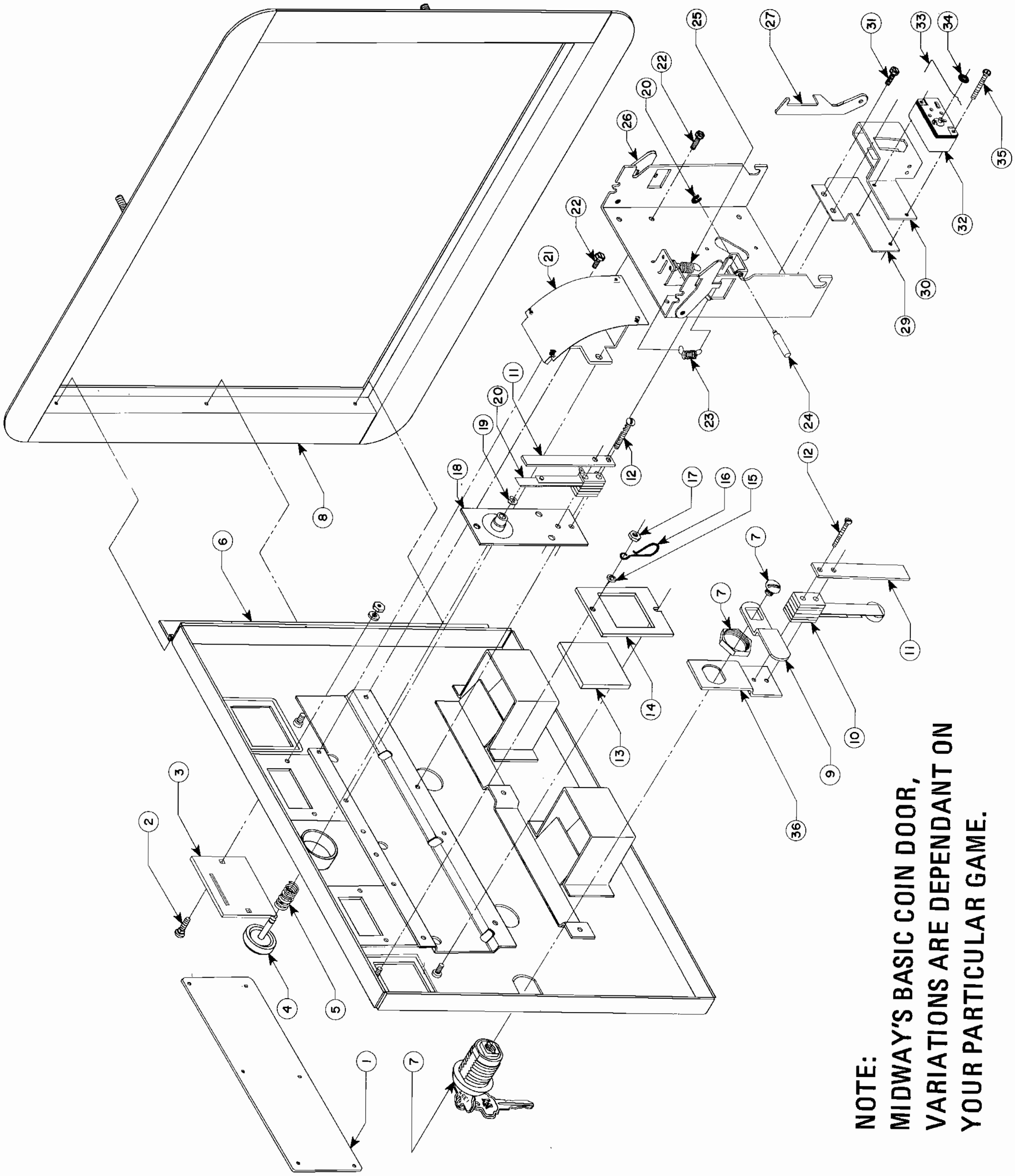
ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
	A097-00001-0000	LOCK ASSY.
	A749-00003-0000	CASH BOX ASSY.
	A627-00052-0000	CASH BOX COVER ASSY.
	0625-00117-0000	CASH BOX GUIDE
	A625-00024-0000	CASH BOX GUIDE BRKT. ASSY.
	0017-00101-0628	#8 - 32 x 3/4 CARRIAGE BOLTS (4 REQ'D.)
	0017-00103-0008	#8 - 32 HEX NUT (4 REQ'D.)
	A084-90700-A852	GAME BOARD P.C. ASSY.
	A084-90000-L852	MOTHER BOARD P.C. ASSY.
	A082-90400-H000	POWER SUPPLY ASSY.
	A749-00004-0000	TRANSFORMER BOARD ASSY.
	0624-00902-0100	P.C. SUPPORT BRKT. – 12" (4 REQ'D.)
	0624-00902-0500	P.C. SUPPORT BRKT. – 6-1/2" (2 REQ'D.)
	0624-00902-0400	P.C. SUPPORT BRKT. – 4" (6 REQ'D.)
	0624-00902-0300	P.C. SUPPORT BRKT. – 2-1/2"
	0597-00012-0100	P.C. SUPPORT BRKT. – R.H.
	0597-00012-0200	P.C. SUPPORT BRKT. – L.H.
	0017-00101-0028	#8 x 3/4 HEX HD. S.M.S. (22 REQ'D.)
	0017-00104-0037	3/4 x 3/16 x 1/16 STL. WASHER (22 REQ'D.)
	0017-00009-0419	PIN EXTRACTOR TOOL (PIN POPPER) (MOLAX JACKS ONLY)

NOTES

This space is provided for personal notes

NO. 852 & 870 – SPACE INVADERS DELUXE – FRONT DOOR ASSY.



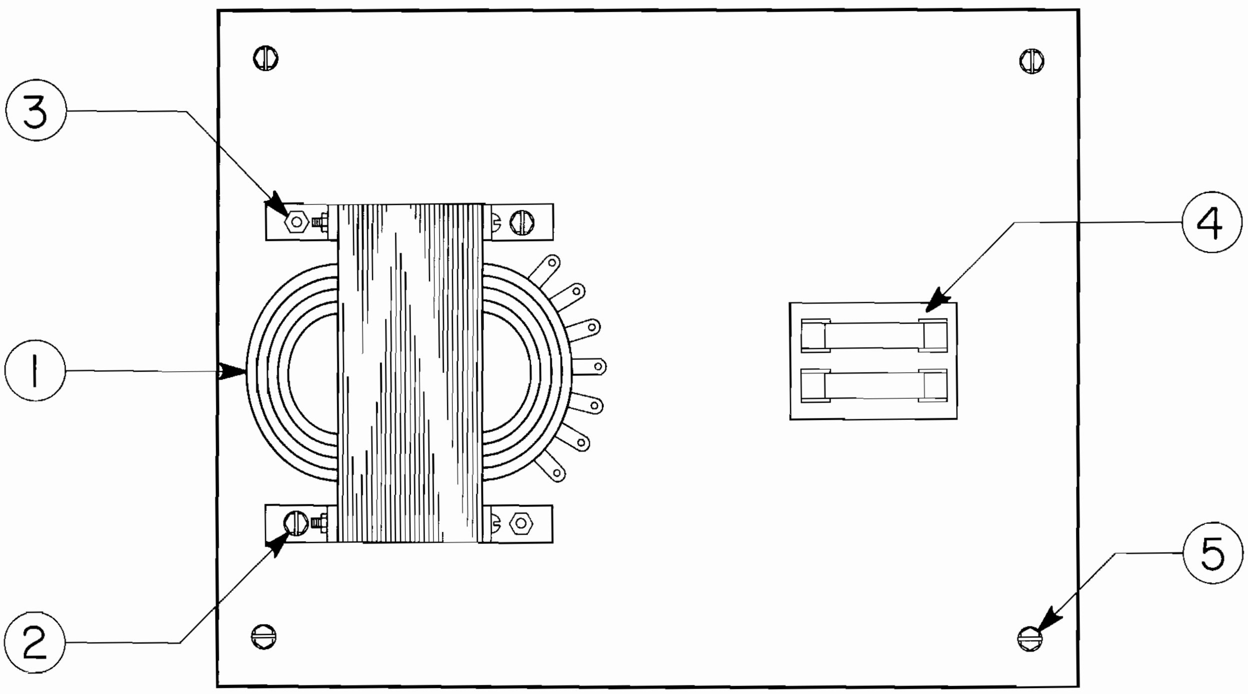
NOTE:
MIDWAY'S BASIC COIN DOOR,
VARIATIONS ARE DEPENDANT ON
YOUR PARTICULAR GAME.

NO. 852 & 870 – SPACE INVADERS DELUXE – FRONT DOOR ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	0090-00902-0000	DRESS PLATE
	0090-00902-0100	DRESS PLATE (W/O PRESS BUTTON TO START GAME)
2	0017-00101-0552	#6 - 32 x 1/4 CARRIAGE BOLT (2)
3	0090-00117-03XF	COIN ENTRY PLATE (25¢)
4	0090-00906-0000	PLASTIC START BUTTON
5	0010-00007-0000	COMPRESSION SPRING
6	0090-00013-0200	DOOR ASSY. DOUBLE ENTRY
7	0017-00005-0050	DOOR LOCK & KEY WITH SCREW & NUT
8	0090-00002-02BR	DOUBLE DOOR FRAME
9	0017-00005-0041	421 N.S. CAM
10	0090-00901-0000	DOOR SWITCH
11	0090-00126-01XF	SWITCH BACKUP PLATE
12	0017-00101-0528	#5 - 40 x 3/4" LNG. M.S.
13	0090-00903-0040	25¢ WINDOW
14	0090-00143-0000	COIN PLEX RETAINER
15	0017-00104-0002	SPLIT LOCK WASHER
16	0017-00007-0019	KEY HOOK
17	0017-00103-0005	#6 - 32 HEX NUT
18	0090-00010-0000	SW. PLATE & OILLITE ASSY.
19	0017-00100-0018	"E" RING
20	0090-00131-0000	SWITCH
21	0090-00104-0000	TOP & BTM. COIN CHUTE W/BRKT. ASSY.
22	0017-00101-0598	#8 - 32 x 5/16 SCREW
23	0010-00181-0100	SPRING
24	0090-00129-00XF	PIVOT POST
25	0010-00134-0000	SPRING
26	0090-00008-0000	ACCEPTOR FRAME ASSY.
27	0093-00155-00XF	REJECTOR LEVER
28	0017-00100-0012	"E" RING
29	0093-00151-00XF	COIN GUIDE MTG. BRACKET
30	0090-00005-0000	COIN GUIDE ASSY.
31	0017-00101-0555	#6 - 32 x 5/16 SCREW
32	0017-00005-0039	COIN SWITCH
33	0010-00557-2500	TRIP WIRE
34	0017-00007-0132	PUSH-ON RING (BIK)
35	0017-00101-0507	#4 - 36 x 3/4 SCREW
36	0090-00128-00XF	SWITCH BRKT. – DOOR TILT
	A090-00061-0000	OPTIONAL - ANTI-SPRING DEVICE ASSY. (REPLACES ITEM NO. 30)

NO. 852 & 870 – SPACE INVADERS DELUXE – TRANSFORMER BOARD ASSY.



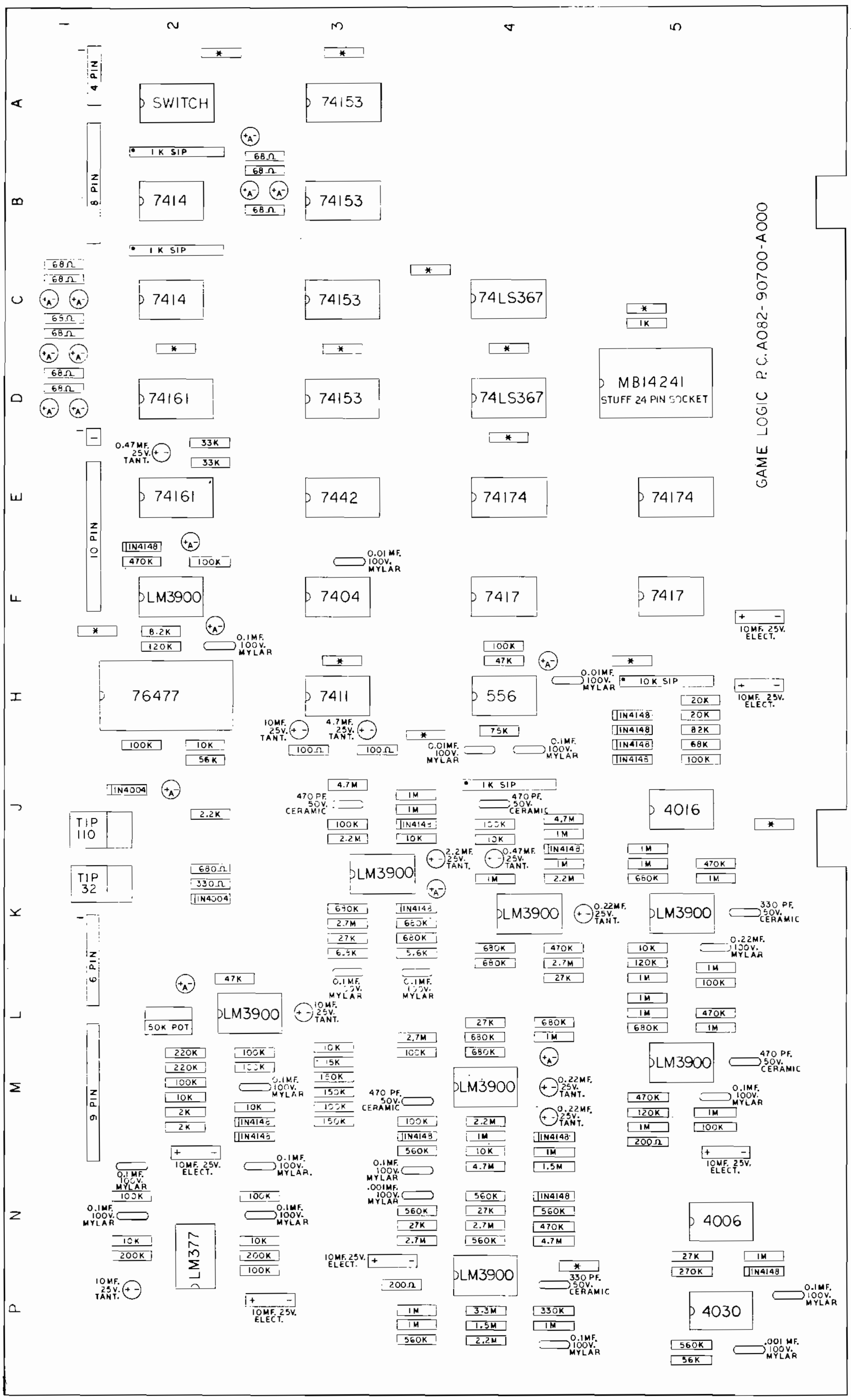
MIDWAY MFG. CO.
A BALLY COMPANY

NO. 852 & 870 – SPACE INVADERS DELUXE – TRANSFORMER BOARD ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION
1	MT00-00058-0000	TRANSFORMER – 60 CYCLE – DOMESTIC (OR)
	MT00-00059-0000	TRANSFORMER – 50 CYCLE – FOREIGN
2	0017-00101-0017	#6 x 1/2 SLT. HEX HD. WD. SCR. (2 REQ'D.)
3	0017-00101-0637	#8 - 32 x 1" CARRIAGE BOLT (2 REQ'D.) WITH
	0017-00103-0008	#8 - 32 HEX NUT (2 REQ'D.)
4	0720-00001-0200	2 POSITION FUSE BLOCK
	0017-00003-0103	FUSE 1 AMP
	0017-00003-0006	FUSE 3 AMP
5	0017-00101-0018	#6 x 3/4 SLT. HEX HD. SCREW (5 REQ'D.)
	0017-00003-0064	16 FT. LINE CORD – NOT SHOWN

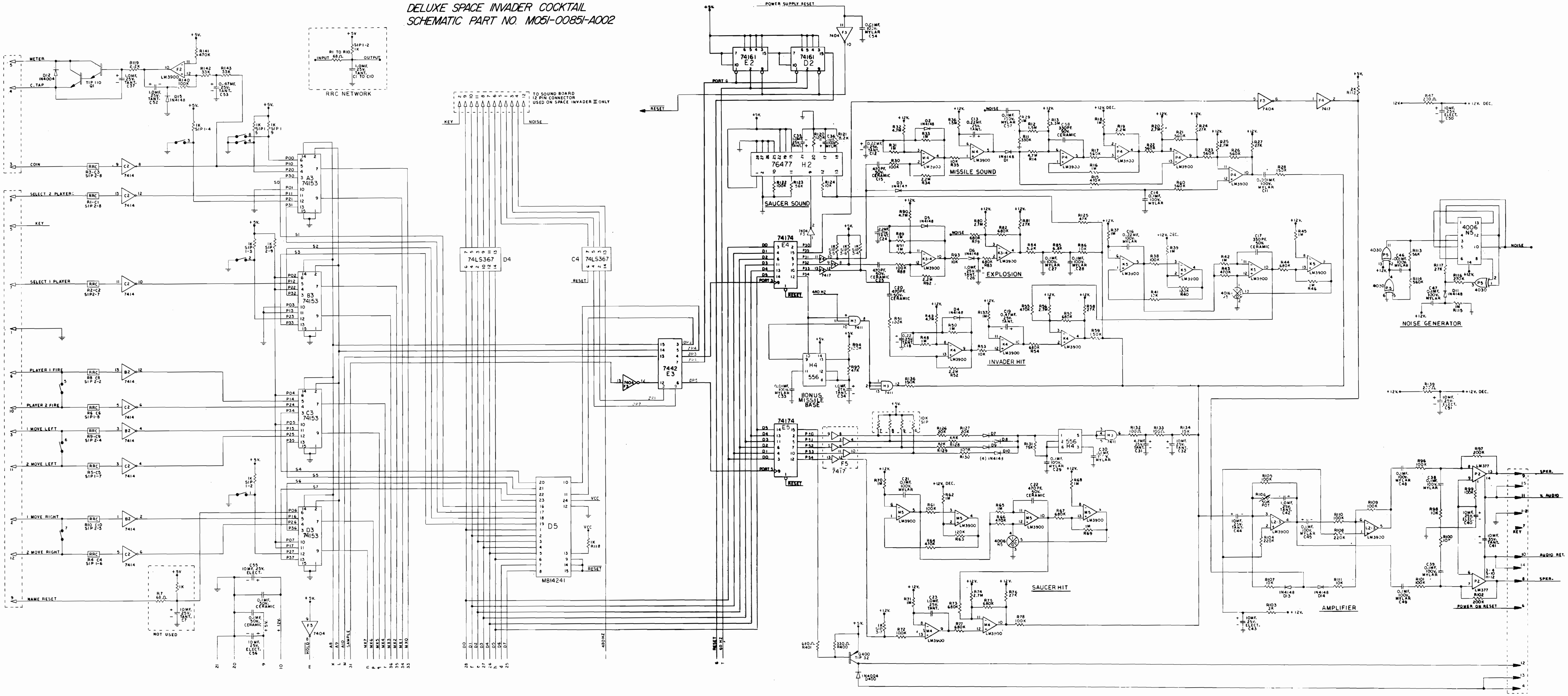
COMPONENT LAYOUT PART NO. M051-00851-A003



* INDICATES 0.1MF 50V. AXIAL LEAD CERAMIC CAP
A " 1.0MF 25V. TANT. CAP.
P.C. A082-90700-A000 USED ON: SPACE INVADER II COCKTAIL
DELUXE SPACE INVADER UPRIGHT
DELUXE SPACE INVADER COCKTAIL

MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK, IL. 60131

GAME LOGIC P.C. A082-90700-A000
USED ON: SPACE INVADER II COCKTAIL
DELUXE SPACE INVADER UPRIGHT
DELUXE SPACE INVADER COCKTAIL
SCHEMATIC PART NO. M051-00851-A002



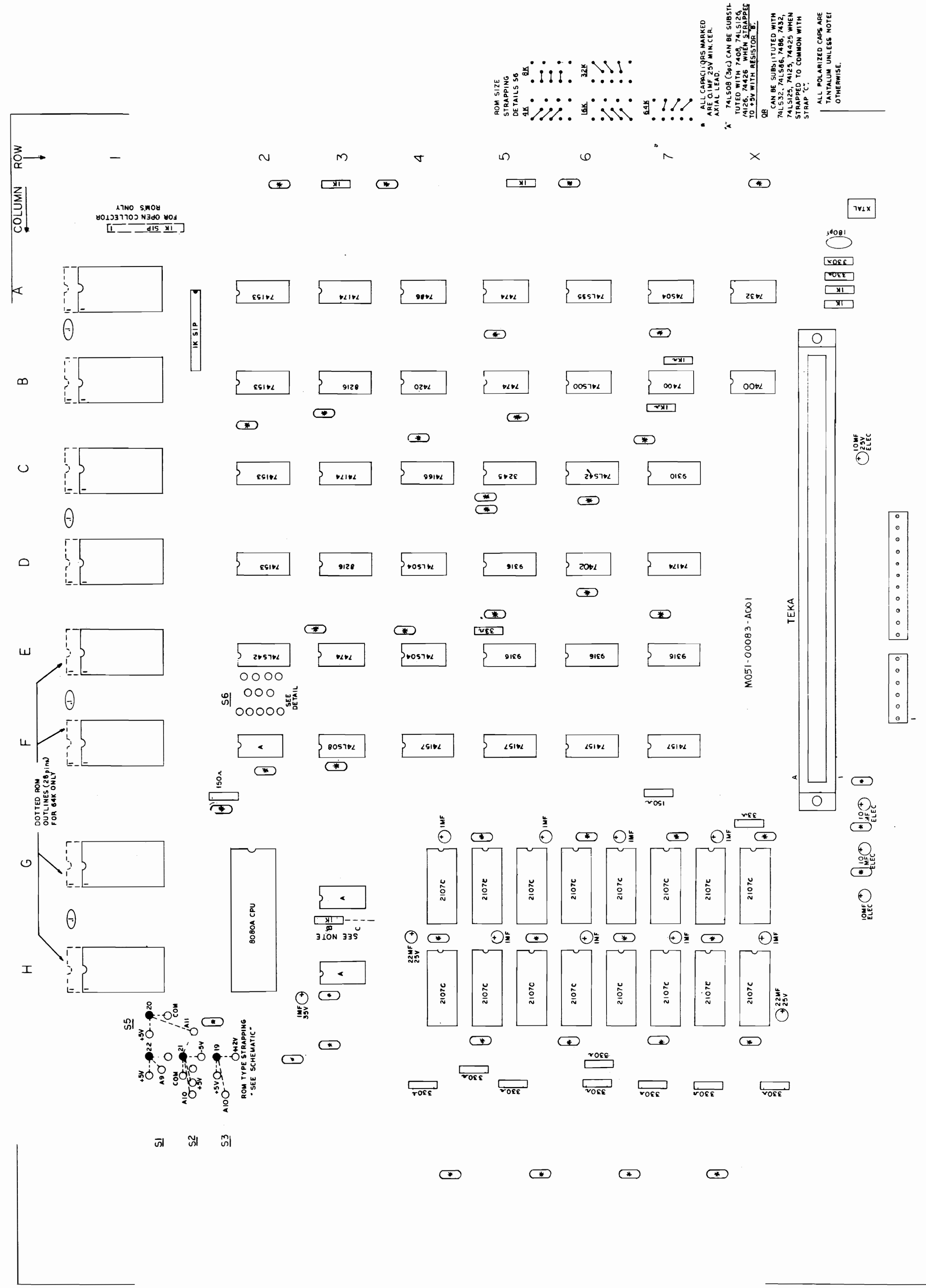
MIDWAY MFG. CO.
A BALLY COMPANY

NOTES

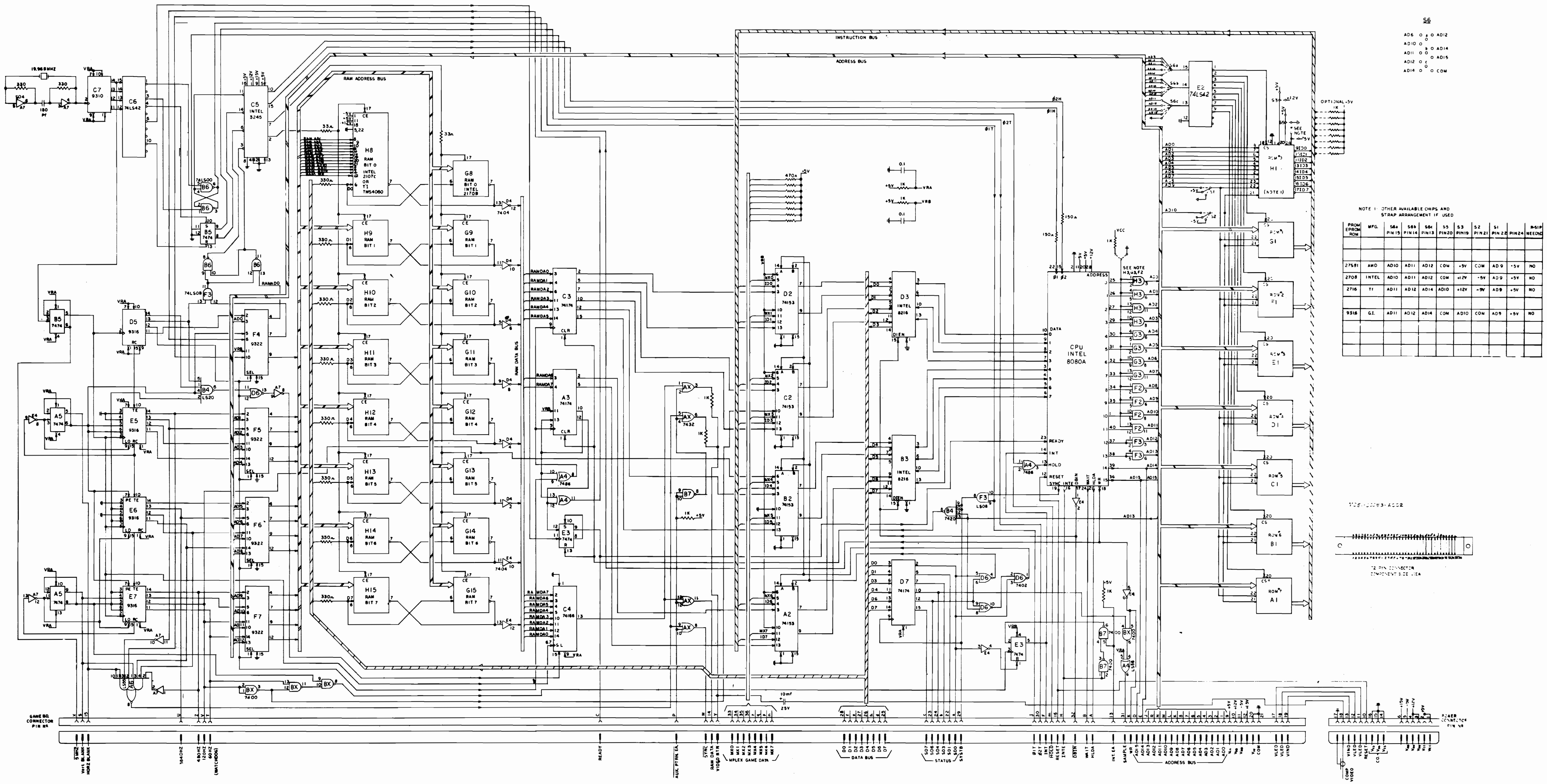
This space is provided for personal notes

MOTHER BOARD COMPONENTS LAYOUT

A084-90000-L000



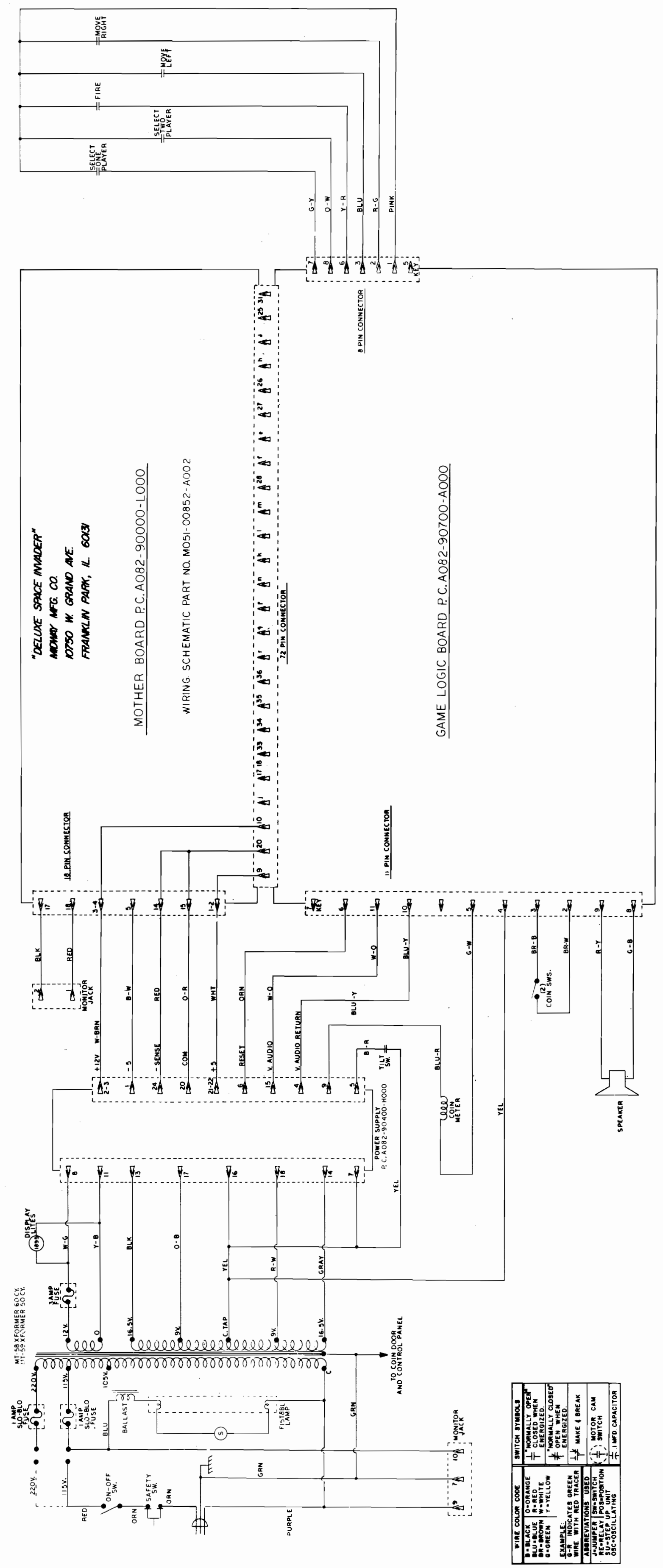
MIDWAY MFG. CO.
A BALLY COMPANY

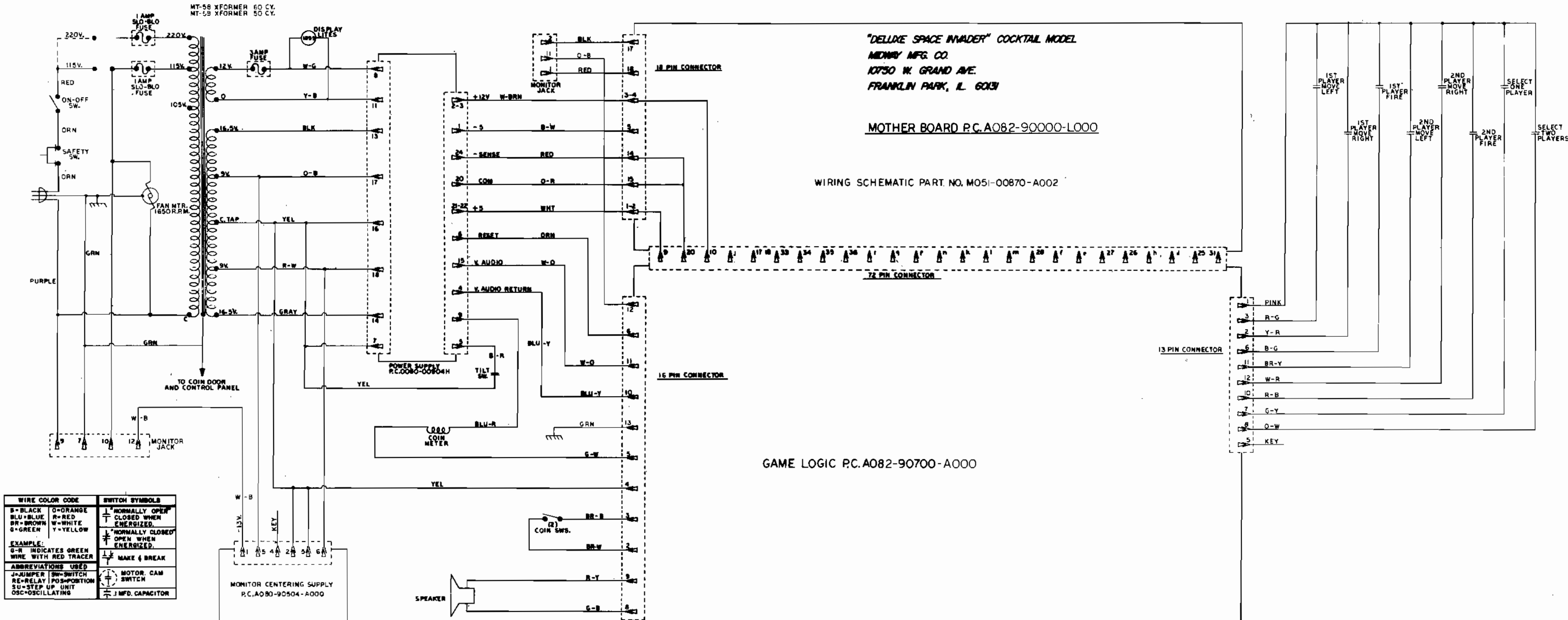


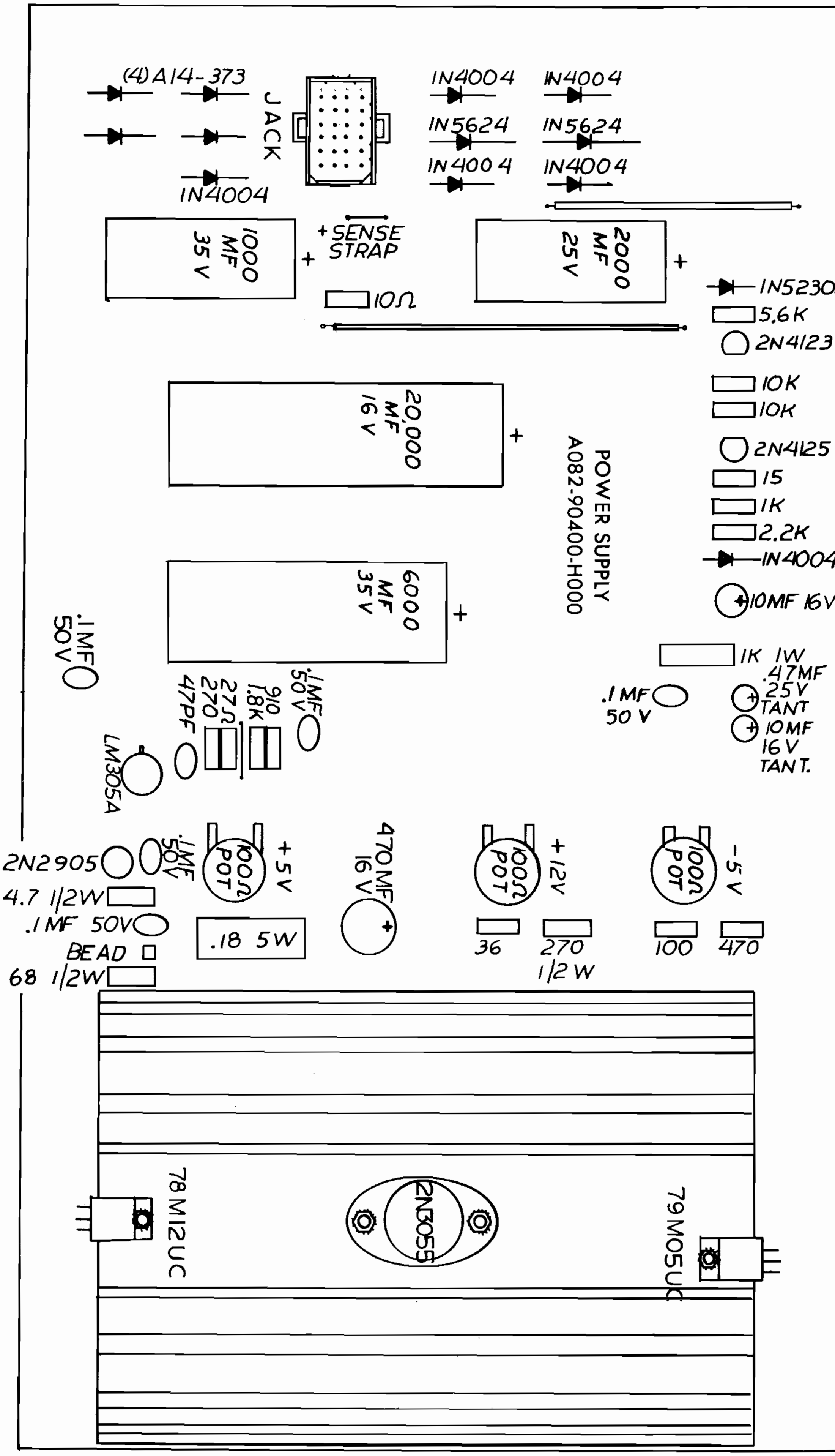
MOTHER BOARD SCHEMATIC
A084-90000-L000

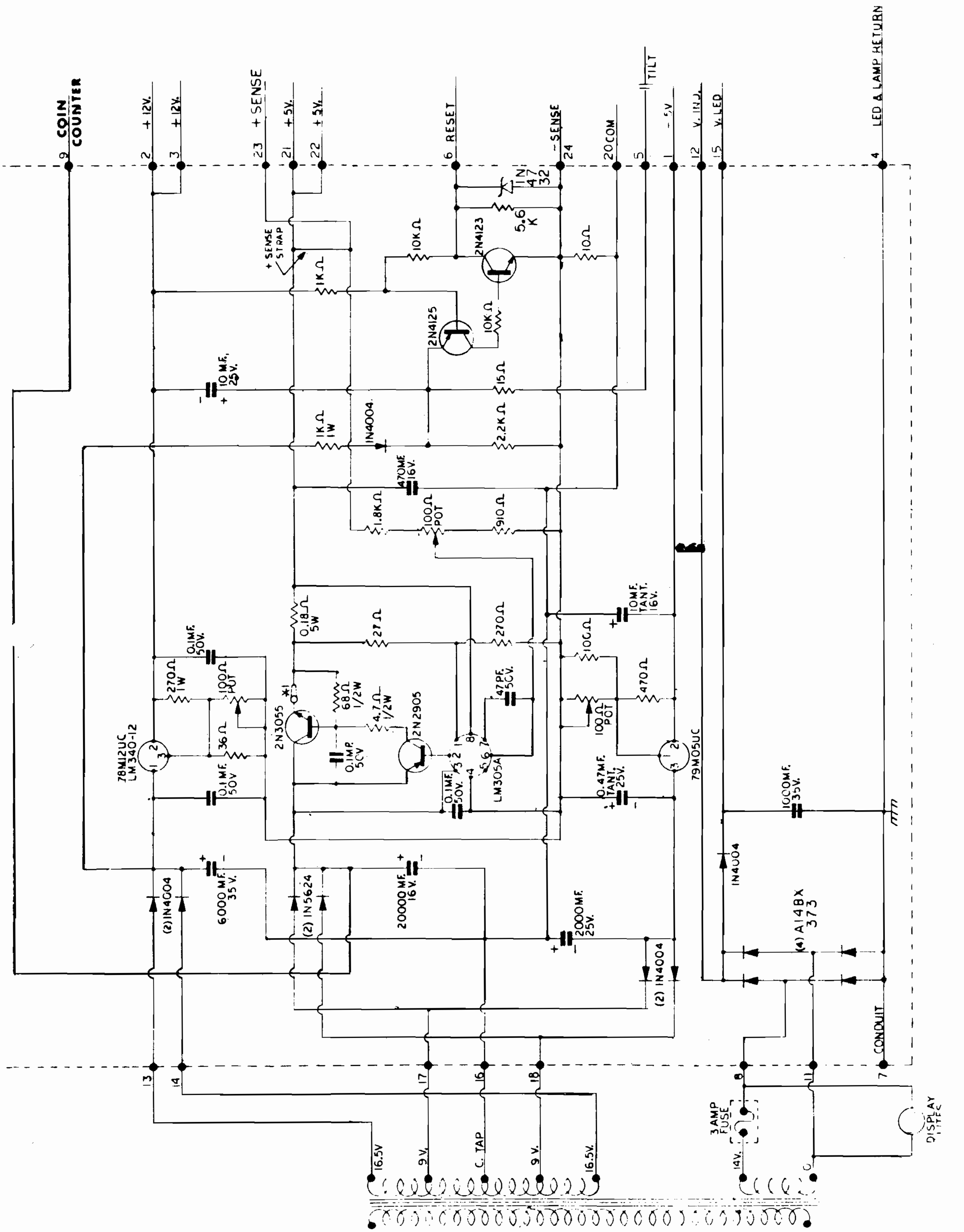
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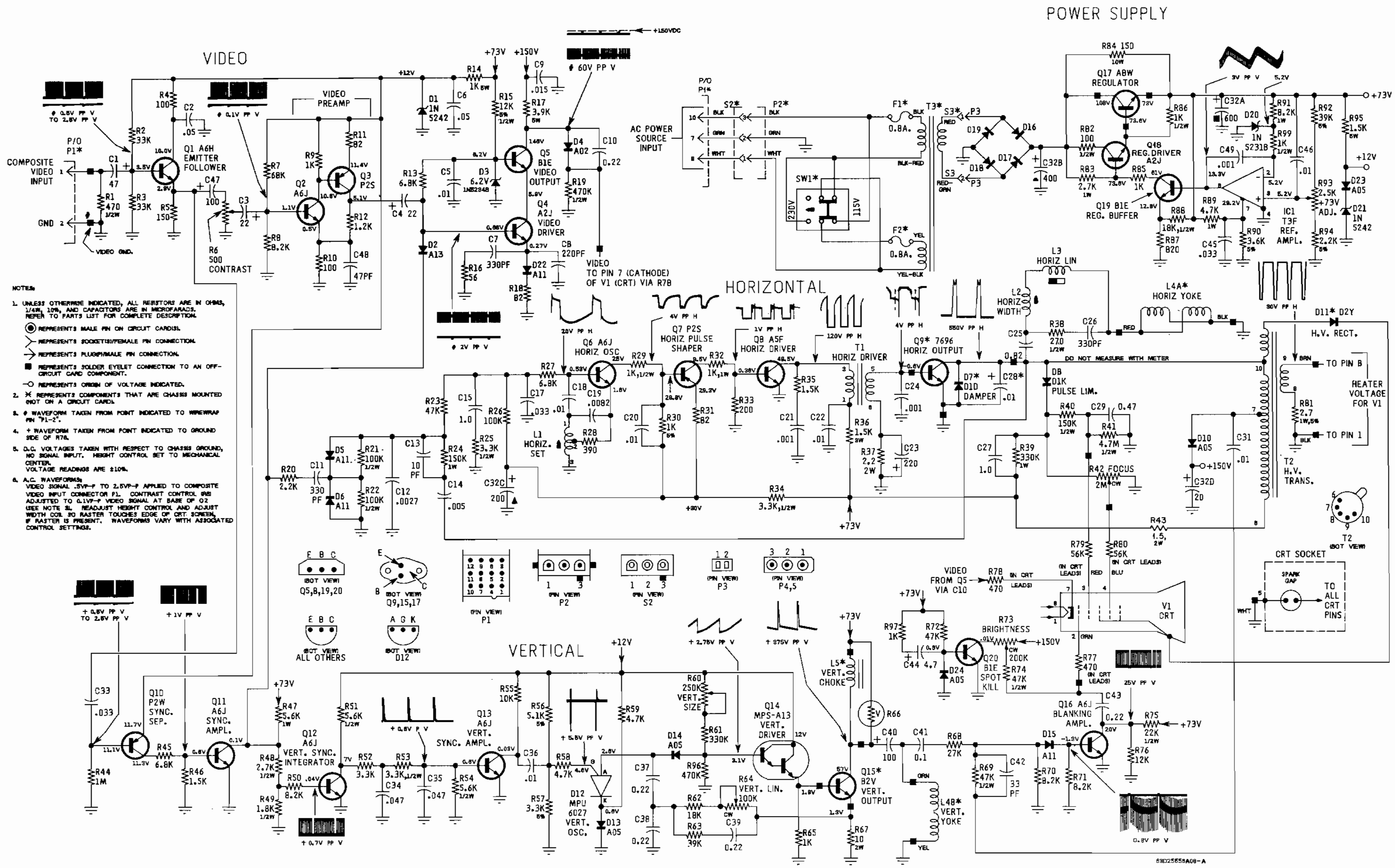



"DELUXE SPACE INVADER" COCKTAIL MODEL
MIDWAY MFG. CO.
10750 W. GRAND AVE.
FRANKLIN PARK, IL 60131
MOTHER BOARD P.C. A082-90000-L000
WIRING SCHEMATIC PART NO. M051-00870-A002
GAME LOGIC P.C. A082-90700-A000
18 PIN CONNECTOR
72 PIN CONNECTOR
16 PIN CONNECTOR
13 PIN CONNECTOR
POWER SUPPLY P.C.0080-00904H
MONITOR CENTERING SUPPLY P.C. A080-90504-A000
MT-58 XFORMER 60 CY.
MT-59 XFORMER 50 CY.
1 AMP SLO-BLO FUSE
3 AMP FUSE
DISPLAY LITES
FAN MTR. 1650 R.P.M.
ON-OFF SW.
SAFETY SW.
TO COIN DOOR AND CONTROL PANEL
MONITOR JACK
TILT SW.
COIN METER
(2) COIN SWS.
SPEAKER
1ST PLAYER MOVE LEFT
1ST PLAYER MOVE RIGHT
1ST PLAYER FIRE
2ND PLAYER MOVE LEFT
2ND PLAYER MOVE RIGHT
2ND PLAYER FIRE
SELECT ONE PLAYER
SELECT TWO PLAYERS
+12V
-5
-SENSE
COM
+5
RESET
V. AUDIO
V. AUDIO RETURN
WIRE COLOR CODE
B=BLACK O=ORANGE
BLU=BLUE R=RED
BR=BROWN W=WHITE
G=GREEN Y=YELLOW
EXAMPLE:
G-R INDICATES GREEN WIRE WITH RED TRACER
ABBREVIATIONS USED
J=JUMPER SW=SWITCH
RE=RELAY POS=POSITION
SU=STEP UP UNIT
OSC=OSCILLATING
SWITCH SYMBOLS
"NORMALLY OPEN" CLOSED WHEN ENERGIZED.
"NORMALLY CLOSED" OPEN WHEN ENERGIZED.
MAKE & BREAK
MOTOR CAM SWITCH
.1 MFD. CAPACITOR


POWER SUPPLY
A082-90400-H000
(4) A14-373
JACK
IN4004
IN4004
IN4004
IN5624
IN5624
IN4004
IN4004
+ SENSE
STRAP
1000
MF
35 V
10Ω
2000
MF
25 V
IN5230A
5.6 K
2N4123
10K
10K
2N4125
15
1K
2.2K
IN4004
10MF 16V
20,000
MF
16 V
6000
MF
35 V
.1MF
50V
.1MF
50V
910
1.8K
27Ω
270
47PF
LM305A
1K 1W
.47MF
.25 V
TANT
10 MF
16 V
TANT.
.1 MF
50 V
2N2905
4.7 1/2W
.1 MF 50V
BEAD
68 1/2W
.1MF
50V
100Ω
POT
+5V
.18 5W
470 MF
16 V
100Ω
POT
+12V
36
270
1/2 W
100Ω
POT
-5V
100
470
78M12UC
2N3055
79M05UC



9 COIN COUNTER
2 +12V.
3 +12V.
23 +SENSE
21 +5V.
22 +5V.
6 RESET
-SENSE 24
20 COM
5
TILT
1 -5V
12 V. IND.
15 V. LED
4 LED & LAMP RETURN
+SENSE STRAP
1K Ω
10K Ω
2N4123
1N4732
5.6 K
10 Ω
2N4125
10K Ω
10 MF. 25V.
15 Ω
1K Ω 1W
1N4004
2.2K Ω
470 MF. 16V.
1.8K Ω
100 Ω POT
910 Ω
0.18 Ω 5W
27 Ω
270 Ω
10 MF. TANT. 16V.
100 Ω
470 Ω
0.1 MF. 50V.
270 Ω 1W
100 Ω POT
68 Ω 1/2W
4.7 Ω 1/2W
2N3055
2N2905
47 PF. 50V.
100 Ω POT
78M12UC LM340-12
36 Ω
0.1 MF. 50V
0.1 MF. 50V.
0.1 MF. 50V.
LM305A
0.47 MF. TANT. 25V.
79M05UC
1000 MF. 35V.
(2) 1N4004
6000 MF. 35V.
(2) 1N5624
20000 MF. 16V.
2000 MF. 25V.
(2) 1N4004
1N4004
(4) A14BX 373
CONDUIT
13
14
17
16
18
8
11
7
3 AMP FUSE
DISPLAY LITES
16.5V
9V.
C. TAP
9 V.
16.5V.
14V.



M5000–155, M7000–155 – Diagram Schematic

ELECTRICAL PARTS

REF. NO.	PART NUMBER	DESCRIPTION
	1Y25017A01	MONITOR PANEL: complete; KT364LM
	1Y25017A02	POWER, Audio Panel: complete: KT365LM

CAPACITORS

REF. NO.	PART NUMBER	DESCRIPTION
C-1	23C65282A41	50 mf 50V Lytic
C-2	23C65282A41	50 mf 50V Lytic
C-3	21S180D10	220 pf 20% 100V X5F (Use 21R132503)
C-4	23C65282A41	50 mf 50V Lytic
C-5	21S180B98	180 pf 10% 500V X5F
C-6	23S10255A78	470 mf 16V Lytic
C-7	21S180C01	680 pf 10% 500V X5F
C-8	21S180B85	560 pf 10% 500V X5F
C-10	8S10191B67	.22 mf 10% 250V Polyester
C-11	8S10191A54	.0068 mf 10% 160V Polyester
C-12	21S180D10	220 pf 20% 100V X5F (Use 21R132503)
C-13	21S131625	330 pf 10% X5F
C-15	21S180C41	.0027 mf 10% 500V Z5F (Use 21K121699)
C-16	23S10229A07	1.0 mf +40–20% 15V Lytic (Use 23C43280A17)
C-17	8S10191B90	.033 mf 10% 160V Polyester
C-18	8S10299A73	.01 mf 10% 100V Poly carb
C-19	8S10299A74	.0082 mf 10% 160V Poly carb
C-20	8S10191B98	.01 mf 10% 250V Polyester
C-21	21S180B51	.001 mf 10% 500V X5F
C-22	8S10191B98	.01 mf 10% 160V Polyester
C-23	21S180C02	10 pf 10% N150
C-24	23D65282A40	150 mf 10V Lytic
C-25	21S180B51	.001 mf 10% 500V X5F
C-26	8S10212B53	.47 mf 10% 630V Mtlz Poly
C-27	8S10212A11	1.0 mf 10% 630V Mtlz Poly
C-28	8S10571A06	.01 mf 5% 1200V Poly Prop Foil
C-29	8S10571A23	.56 mf 10% 250V Mtlz Prop Foil
C-30	8S10191A32	.047 mf 10% 250V Polyester
C-31	21S180B87	220 pf 10% 500V X5F
C32	21S180D34	.005 mf 20% 1KV Z5F (Use 21S180D31)
C-33	8S10212A69	.47 mf 10% 100V Mtlz Poly
C-34	8S10191A32	.047 10% 250V Polyester
C-35	8S10191B98	.01 mf 10% 250V Polyester
C-36	23S10255A69	4.7 mf 100V Lytic
C-37	8S10212A20	2.2 mf 10% 100V Mtzl Poly
C-38	8S10212A20	2.2 mf 10% 100V Mtlz Poly
C-39	8S10191B67	.22 mf 10% 250V Polyester
C-40	8S10212A10	1.0 mf 10% 100V Mtlz Poly (Use 8S10191A46
C-41	8S10064A06	.01 mf 10% 600V Mylar
C-42	21S180A71	470 pf 10% 500V X5F
C43	23C65807A47	400 mf/125V; 600 mf/50V; 20 mf/200V Lytic
C-44	21S180E60	.01 mf +80–20% 50V Z5V
C-47	•23C65807A52	5000 mf 20V Lytic
C-49	23S10255A31	470 mf 40V Lytic
C-50	23D65282A41	50 mf 50V Lytic
C-51	23S10255B43	40 mf 100V Lytic

DIODES & RECTIFIERS

REF. NO.	PART NUMBER	DESCRIPTION
D-1	48S134921	DIODE, Silicon: D1D; Damper
D-2	48S134978	DIODE, Silicon: D1K; Pulse Limiter
D-3	48D67120A11	DIODE, Low Power
D-4	48S137114	RECTIFIER, H. V.: Silicon; D2Y
D-5	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-6	48S137469	DIODE, Silicon: zener; D7G
D-7	48S134917	DIODE, Dual: D1C; Detector
D-8	48S67120A11	DIODE, Low Power
D-9	•48S191A10	RECTIFIER, Silicon: 91A10
D-10	48S191A10	RECTIFIER, Silicon: 91A10
D-11	48S101A10	RECTIFIER, Silicon: 91A10
D-12	48S191A10	RECTIFIER, Silicon: 91A10
D-13	48D67120A11	DIODE, Low Power
D-14	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-15	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-16	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-17	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-18	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-19	48D67120A11	DIODE, Low Power
D-20	•48S10641D43	DIODE, Silicon: D4.3
D-21	48D67120A11	DIODE, Low Power
D-22	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D23	48S191A05	RECTIFIER Silicon: 91A05 (Use 48S191A07)

FUSES

REF. NO.	PART NUMBER	DESCRIPTION
F-1	65S139424	FUSE: 1A-250V
F-2	65S139424	FUSE: 1A-250V

INTEGRATED CIRCUITS

REF. NO.	PART NUMBER	DESCRIPTION
IC-1	•51S10732A01	INTEGRATED CIRCUIT: T3F

COILS & CHOKES

REF. NO.	PART NUMBER	DESCRIPTION
L-1	24D68822A08	HORIZ SET
L-2	24D68801A67	COMPENSATING: 2000 uh
L-3	24D69163A18	HORIZ LINEARITY
L-4	24V25000A74	HORIZ WIDTH: incls C42 & R68
L-5	24D68523A15	DEFLECTION YOKE

TRANSISTORS

REF. NO.	PART NUMBER	DESCRIPTION
Q-1	48S137171	1st VIDEO: A6H
Q-2	48S137127	2nd VIDEO: P2S
Q-3	48S134919	VIDEO OUTPUT: A1M
Q-4	48S137317	VIDEO DRIVER: A8H
Q-5	48S137115	SYNC SEPERATOR: A5U
Q-6	48S137172	HORIZ OSCILLATOR: A6J
Q-7	48S137127	HORIZ PULSE SHAPER: P2S
Q-8	48S137093	HORIZ DRIVER: A5F
Q-9	48S137203	HORIZ OUTPUT: A6Z
Q-10	48S137173	VERT OSCILLATOR (1): P2W
Q-11	48S137171	VERT OSCILLATOR (2): A6H
Q-12	48S137115	VERT DRIVER: A5U
Q-13	48S134900	VERT OUTPUT: A1C
Q-14	48S134952	REGULATOR DRIVER; A2J
Q-15	48S137315	REFERENCE AMP: A8G
Q-16	48S137368	REGULATOR: A8W
Q-17	48S137172	AUDIO DRIVER: A6J
Q-18	48S137168	AUDIO OUTPUT: P2V
Q-19	48S137169	5V REGULATOR, Driver: A6G
Q-20	48S137344	5V REGULATOR: A8U
Q-21	48S137476	SPOT KILLER: B1E

CONTROLS

REF. NO.	PART NUMBER	DESCRIPTION
R-5	18D68222A34	CONTRAST: 250 Ohm
R-10	18D66401A44	VIDEO BIAS: 4K
R-17	18D67858A12	FOCUS: 2 meg
R-21	18D68222A35	BRIGHTNESS: 200K
R-34	18D68222A37	HORIZ HOLD: 25K
R-59	18D66401A44	VERT LINEARITY: 4K
R-65	17D65820A38	VERT SIZE: 15 Ohm
R-74	17D65820A37	REGULATOR ADJUST: 2K
R-82	18D68222A36	VERT HOLD: 3K
R-85	18D68222A34	VOLUME: 250 Ohm

RESISTORS

REF. NO.	PART NUMBER	DESCRIPTION
R-1	6S127633	470 10% 1/2W
R-2	6S125568	22K 10% 1/2W
R-3	6S127541	56K 10% 1/2W
R-4	6S127633	470 10% 1/2W
R-6	6S128955	1500 10% 1W
R-7	6S121847	4700 10% 1/2W
R-8	6S122445	1800 10% 1/2W
R-9	6S119926	2700 10% 1/2W
R-11	6S128226	120 10% 1/2W
R-12	6S127633	470 10% 1/2W
R-13	17S10731A02	7500 5% 5W WW
R-14	6S124797	150 10% 1/2W
R-15	6S127516	82 10% 1/2W
R-18	– – – –	Part of CRT socket assembly
R-19	– – – –	Part of CRT socket assembly
R-20	– – – –	Part of CRT socket assembly
R-22	6S129296	270K 10% 1/2W
R-23	6S10053C67	27K 5% 1/2W
R-24	6S127538	3.3 meg 10% 1/2W
R-25	6S121300	27K 10% 1/2W
R-26	6S127541	56K 10% 1/2W
R-27	6S129875	2200 10% 1/2W
R-28	6S125531	180K 10% 1/2W
R-29	6S125531	180K 10% 1/2W
R-30	6S125892	47K 10% 1/2W
R-31	6S125534	100K 10% 1/2W
R-32	6S124506	3300 10% 1/2W
R-33	6S10053C53	6800 5% 1/2W
R-35	6S127541	56K 10% 1/2W
R-36	6S125545	390 10% 1/2W
R-37	6S121301	1000 10% 1/2W
R-38	6S10053C33	1000 5% 1/2W
R-39	6S127516	82 10% 1/2W
R-40	6S127547	1000 10% 1W
R-41	6S127099	220 10% 1/2W
R-42	6S127513	1500 10% 1/2W
R-43	17S10130B07	1500 10% 3W fxd mtl film
R-44	17S744356	2.2 10% 2W WW
R-45	6S120141	150K 10% 1W
R-46	6S127634	33K 10% 1W
R-47	6S128229	680K 10% 1/2W
R-48	6S10053D21	4.7 meg 10% 1/2W
R-49	6S124797	150 10% 1/2W
R-50	6S10053C45	3300 5% 1/2W
R-52	6S124506	3300 10% 1/2W
R-53	6S129874	68 10% 1/2W
R-54	6S131972	39 10% 1/2W
R-55	6S10053C65	22K 5% 1/2W
R-56	6S125535	39K 10% 1/2W
R-57	6S124506	3300 10% 1/2W
R-58	6S129793	82K 5% 1/2W
R-60	6S129875	2200 10% 1/2W
R-61	6S10053F29	820 10% 1W
R-62	6S127515	3900 10% 1/2W

REPLACEMENT PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION
R-63	6S121301	1000 10% 1/2W
R-64	17S10130C91	10 10% 1/2W (special)
R-66	6S129064	4700 10% 1W
R-67	6S122848	18K 10% 1/2W
R-68	6S124797	150 10% 1/2W
R-69	17S647132	1200 10% 5W WW (Use 17S136197)
R-71	6S119926	2700 10% 1/2W
R-72	6S124551	15K 10% 1/2W
R-73	6S129875	2200 10% 1/2W
R-75	6S121301	1000 10% 1/2W
R-76	6S124506	3300 10% 1/2W
R-77	6S129221	100 10% 1/2W
R-78	6S127005	5600 10% 1/2W
R-79	17S135589	150 10% 10W WW
R-81	6C66263A08	VARISTOR (Use 6S66263A16)
R-86	6S127099	220 10% 1/2W
R-88	6S121301	1000 10% 1/2W
R-89	– – – –	Part of CRT Socket
R-90	6S131412	56 10% 1/2W
R-91	6S10053C39	1800 5% 1/2W
R-92	6S10053C57	10K 5% 1/2W
R-95	6S125568	22K 10% 1/2W
R-96	6S125568	22K 10% 1/2W
R-97	6S121847	4700 10% 1/2W
R-98	6S127099	220 10% 1/2W
R-99	6S128226	120 10% 1/2W

SWITCHES

REF. NO.	PART NUMBER	DESCRIPTION
SW-1	40S10624A01	SWITCH, Slide: DPDT (115V–230V)

TRANSFORMERS

REF. NO.	PART NUMBER	DESCRIPTION
T-1	25D67440A03	HORIZ DRIVER
T-2	24D69791A21	H. V. TRANSFORMER: complete
T-3	25D65840A22	VERT OUTPUT (Use 25D65840B23)
T-4	*25D68164A31	POWER

MISCELLANEOUS ELECTRICAL PARTS

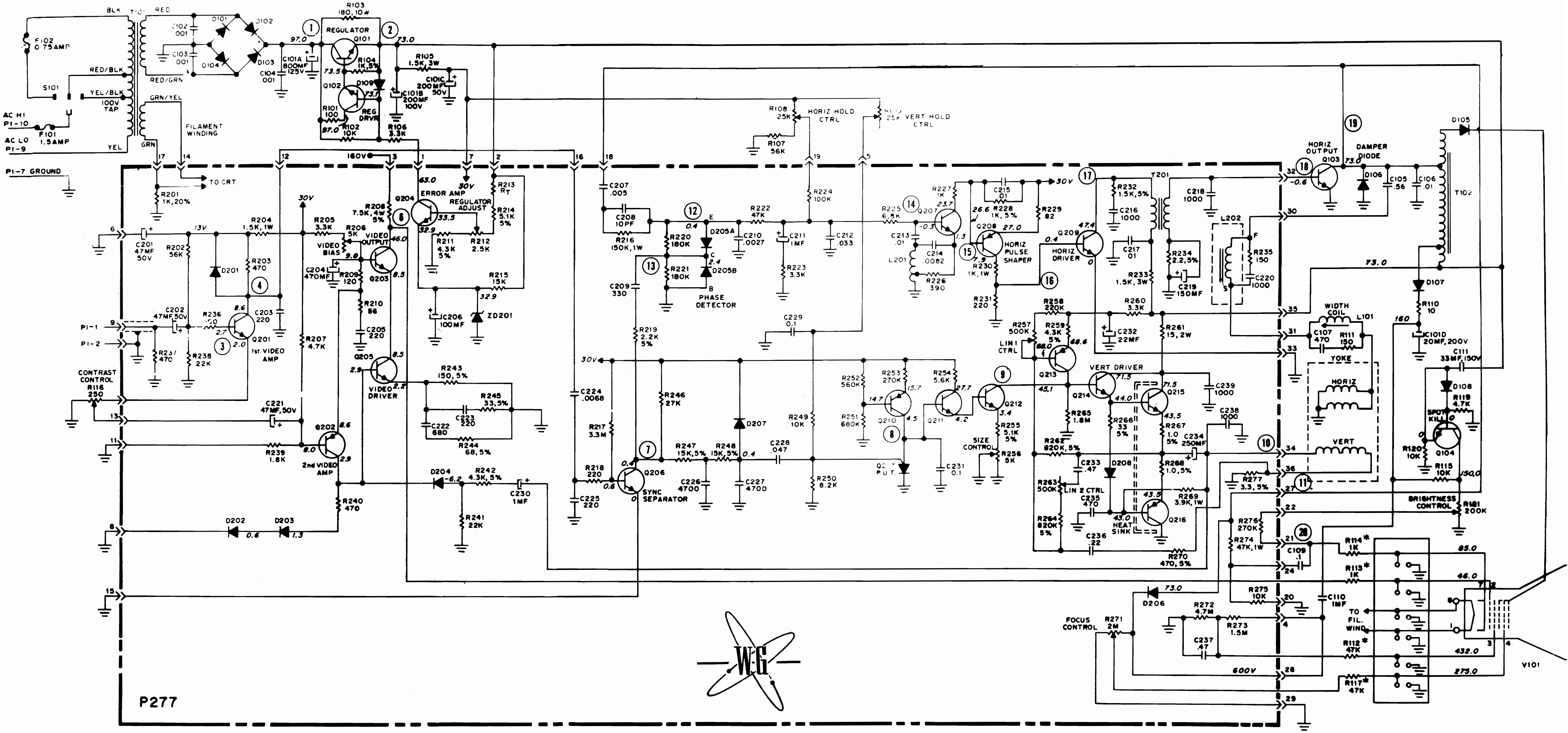
REF. NO.	PART NUMBER	DESCRIPTION
V-1	20WP4	CRT (XM501-10 19VP111)
	23JEP4	CRT (XM701-10 23VP111)
	50V25008A22	SPEAKER: 4" PM; incls D22
E-1	65S139451	LAMP: No. 1436

MECHANICAL PARTS

REF. NO.	PART NUMBER	DESCRIPTION
	9D66133A28	CAP, SS Rect (HV Transformer – PRI/SEC lead)
	42B25158A01	CLAMP, Metal : Defl Yoke Mtg
	31D70080B04	CONNECTOR, PC panel: 9 contact; on chassis
S-2	*15S10390A06	CONNECTOR, PC panel: 12 contact; less key and contacts (power-audio panel)
P-1	*15S10183A69	CONNECTOR, Plug: 12 contact; less contacts (power)
	*39S10184A63	CONTACT, Plug: for power connector 15S10183A69
	39S10184A22	CONTACT: for S2 connector
	15S10630A01	COVER, nylon: slide switch; SW1
	*7S10609A03	GROMMET, Plastic: PC panel mtg
	26C66745A05	HEAT SINK: Q3
	*26C25198A01	HEAT SINK: Q20
	9C66238A02	HOLDER, Fuse: F1 & F2
	14A562353	INSULATOR, Mica: Transistor socket; Q9, Q13, Q16 & Q20 (Use 14A543810)
	28S10733A01	KEY, Plug: for S2 connector
	2S7051	NUT, hex: 3/8-32; control mtg
	5S10281A03	RIVET, drive pin: nylon; HV transf mtg
	47C66082A03	ROD, Adjustment: width coil; L4
	3S136050	SCREW, tpg: 6-20 x 1/2 clu pan hd; Q9, Q13, Q16 & Q20
	9S10143A41	SOCKET, lamp: E1
	9D67555V27	SOCKET, CRT: incls leads & resistors
	*9D25201A01	SOCKET, HV Rectifier (4): complete; incls 2nd anode lead & cup
	9C63825A01	SOCKET, transistor: Q9, Q13, Q16
	9C63825A02	SOCKET, transistor: Q20
	41D65987A01	SPRING, special: CRT aquadag grnd
	66P65173A47	TOOL, contact removel (S2 connector)

* DENOTES NEW ITEM APPEARING ON ANY LIST FOR FIRST TIME.

MOTOROLA PARTS DEPT.
MOTOROLA INC.
1155 HARVESTER RD.
WEST CHICAGO, IL 60185
PHONE (312) 231-4400



NOTES:

1. VOLTAGE MAY VARY WITH CONTROL SETTING.
2. LINE VOLTAGE MAINTAINED AT 120VAC, 50/60 Hz.
3. ALL D.C. VOLTAGES ±10% MEASURED FROM POINT INDICATED TO CHASSIS USING HIGH IMPEDANCE METER WITH NO SIGNAL INPUT. CONTRAST AND BRIGHTNESS CONTROLS AT MAXIMUM; ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.
4. ◯ - WITH INTERNAL NUMBER INDICATES LOCATION OF WAVE FORM READING.

WELLS – GARDNER ELECTRONICS

CORPORATION

2701 N. KILDARE AVE. • CHICAGO, ILL. 60639 • ALBANY 2-8220

TELEX 25-3286

NOTES:

* INDICATES RESISTORS LOCATED IN PICTURE TUBE LEAD ASSEMBLY.

RESISTANCE VALUES IN OHMS, 1/2 WATT, 10% UNLESS OTHERWISE NOTED. K=1,000 M=1,000,000

CAPACITANCE VALUES OF 1 OR LESS ARE IN MICROFARADS. ABOVE 1 IN PICOFARADS UNLESS OTHERWISE NOTED.

MODEL No.

V1001-5734

REPLACEMENT PARTS LIST

CHASSIS PARTS

CAPACITORS

C101A, B, C, D	45X0558-001	800 µF/125V, 200 µF/100V 200 µF/50V, 20 µF/200V Electrolytic
C102, 103 104	80X0001-000	.001 µF, GMV Z5U Cer. Disc.
★C105	342X5642-049	.56 µF, 400V, 10% Polypropylene
★C106	46X0536-001	.01 µF, 1200V, 5% Polypropylene
C107	80X0099-006	470 pF, Z5F, 10%
C109	342X1044-040	0.1 µF, 400V, 20% Mylar
★C110	46X0540-002	1.0 µF, 630V, 10% Polyester Film
C111	45X0515-032	33 µF, 150V, Electrolytic

CONTROLS

R108, 109	40X0585-091	25k Ohm, Horiz. & Vert. Hold
R116	40X0585-090	250 Ohm, Contrast
R121	40X0585-092	200k Ohm, Brightness

COILS & TRANSFORMERS

★L101	9A2787-001	Coil, Width
★T101	53X0475-001	Transformer, Power
★T102	53X0474-001	Transformer, Flyback

RESISTORS

R101	340X3101-941	100 Ohm, 10%, 1/2W
R102, 115, 120	340X3103-941	10k Ohm, 10%, 1/2W
★R103	340X0181-341	180 Ohm, 10%, 10W, WW
R104	340X3102-931	1k Ohm, 5%, 1/2W
★R105	340X6152-341	1.5k Ohm, 10%, 3W, WW
R106	340X3332-941	3.3k Ohm, 10%, 1/2W
R107	340X3563-941	56k Ohm, 10%, 1/2W
R110	340X3100-941	10 Ohm, 10%, 1/2W
R111	340X3151-941	150 Ohm, 10%, 1/2W
R119	340X3472-941	4.7k Ohm, 10%, 1/2W

SEMICONDUCTORS

D101, 102 103, 104	66X0023-009	Rectifier, Silicon 500V 1N444B
★D105	66X0067-001	Rectifier Varo H1802
★D106	66X0068-001	Diode, Damper MR1-1600
D107	66X0053-001	Diode, 350V Amperex BA148
D108, 109	66X0046-001	Diode, Silicon FDH444
★Q101	86X0117-001	Transistor (NPN) 2N5632 Regulator
Q102	86X0071-001	Transistor (NPN) Reg. Driver MPSA06
★Q103	86X0118-001	Transistor (NPN) BU207 Hor. Output
Q104	86X0065-001	Transistor (NPN) D40N5 Spot Kill

MISCELLANEOUS

	16X0171-001	Fuse Holder
★F101	16X0176-001	Fuse, 1.5 Amp. Slo-Blo 3AG
★F102	16X0175-001	Fuse, 0.75 Amp, Slo-Blo 3AG
★	13X1201-001	HV Lead & Recept. Assy.
	28X0789-001	Spring, Dag, Grounding
★	9A2786-001	Deflection Yoke & Clamp
★V101	19VARP4	CRT (19V1001)
or	or	
★V101	22VATP4	CRT (22V1001)
	38A5473-000	**2 PDT Small Relay (W/Wires)**
	38A5474-000	**6 PDT Large Relay (W/Wires)**

★ Product Safety Device

REPLACEMENT PARTS LIST
P277 CIRCUIT BOARD ASSY.

CAPACITORS

C201, 202, 221	45X0524-027	47 µF, 50V, Electrolytic
C203, 205, 223, 225	80X0099-057	220 pF, 10%, Z5F, Cer. Disc.
C204	45X0524-053	470 µF, 16V, Electrolytic
C206	45X0524-051	100 µF, 50V, Electrolytic
C207	80X0099-192	.005 µF, 20%, 1KV, Cer. Disc.
C208	80X0099-036	10 pF, 10%, 500V, Cer. Disc.
C209	80X0099-013	330 pF, 10%, 500V, Cer. Disc.
C210	349X4722-109	.0027 µF, 10%, Mylar
C211	45X0524-023	1.0 µF, 15V, Electrolytic
C212	349X3332-109	.033 µF, Mylar
C213	46X0537-002	.01 µF, Poly
C214	46X0537-003	.0082 µF, Poly
C215	349X1032-109	.01 µF, 10%, 100V Mylar
C216, 218, 220, 238, 239	80X0099-076	1000 pF, 10%, 500V, Cer. Disc.
C217	349X1032-209	.01 µF, 10%, 200V, Mylar
C219	45X0524-052	150 µF, 10V, Electrolytic
C222	80X0099-137	680 pF, 10%, 500V, Cer. Disc.
C224	349X6822-109	.0068 µF, 10%, 100V, Mylar
C226, 227	80X0099-056	4700 µF, 10%, 500V, Cer. Disc.
C228	349X4732-109	.047 µF, 10%, 100V, Mylar
C229	349X1044-109	0.1 µF, 20%, 100V, Mylar
C230	45X0515-014	1.0 µF, 50V, Electrolytic
C231	349X1042-109	0.1 µF, 10%, 100V, Mylar
C232	45X0524-026	22 µF, 100V, Electrolytic
C233	349X4742-109	.47 µF, 10%, 100V, Mylar
C234	45X0524-025	250 µF, 100V, Electrolytic
C235	80X0099-006	470 pF, 10%, Z5F, Cer. Disc.
C236	349X2242-109	.22 µF, 10%, 100V, Mylar
C237	46X0540-001	.47 µF, 10%, 630V, Polyester Film

CONTROLS

R206, 256	40X0592-008	5k Ohm, Video Output, Size
R212	40X0585-093	2.5k Ohm, Reg. Adj.
R257, 263	40X0592-004	500k Ohm, Lin 1 & 2
R271	40X0585-094	2M Ohm, Focus

COILS & TRANSFORMERS

★L201	9A2788-001	Horiz. Osc.
★L202	9A2789-001	Horiz. Lin.
★T201	52X0126-001	Horiz. Driver

RESISTORS

R201	340X3102-954	1k Ohm, 20%, 1/2W
R202	340X3563-944	56k Ohm, 10%, 1/2W
R203, 237, 240	340X3471-944	470 Ohm, 10%, 1/2W
★R204	340X4152-843	1.5k Ohm, 10%, 1.0W
R205, 223, 260	340X3332-944	3.3k Ohm, 10%, 1/2W
R207	340X3472-944	4.7k Ohm, 10%, 1/2W
★R208	340X7752-733	7.5k Ohm, 5%, 4.0W
R209	340X3121-944	120 Ohm, 10%, 1/2W
R210	340X3560-944	56 Ohm, 10%, 1/2W
R211, 242, 259	340X3432-934	4300 Ohm, 5%, 1/2W
R213	43X0467-001	Thermistor
R214, 255	340X3512-934	5.1k Ohm, 5%, 1/2W
R215	340X3153-944	15k Ohm, 10%, 1/2W
★R216	340X4154-843	150k Ohm, 10%, 1.0W
R217	340X3335-944	3.3M Ohm, 10%, 1/2W
R218, 231	340X3221-944	220 Ohm, 10%, 1/2W
R219	340X3222-934	2.2k Ohm, 5%, 1/2W

★ Product Safety Device

RESISTORS (Cont'd.)

R220, 221	340X3184-944	180k Ohm, 10%, 1/2W
R222	340X3473-944	47k Ohm, 10%, 1/2W
R224	340X3104-944	100k Ohm, 10%, 1/2W
R225	340X3682-944	6.8k Ohm, 10%, 1/2W
R226	340X3391-944	390 Ohm, 10%, 1/2W
R227	340X3102-944	1k Ohm, 10%, 1/2W
R228	340X3102-934	1k Ohm, 5%, 1/2W
R229	340X3820-944	82 Ohm, 10%, 1/2W
★R230	340X4102-843	1k Ohm, 10%, 1.0W
R232	340X3152-934	1.5k Ohm, 5%, 1/2W
★R233	340X6152-743	1.5k Ohm, 10%, 3.0W
R234	340X5022-333	2.2 Ohm, 5%, 2.0W
R235	340X3151-944	150 Ohm, 10%, 1/2W
R236	340X3101-944	100 Ohm, 10%, 1/2W
R238, 241	340X3223-944	22k Ohm, 10%, 1/2W
R239	340X3182-944	1.8k Ohm, 10%, 1/2W
R243	340X3151-934	150 Ohm, 5%, 1/2W
R244	340X3680-934	68 Ohm, 5%, 1/2W
R245, 266	340X3330-934	33 Ohm, 5%, 1/2W
R246	340X3273-944	27k Ohm, 10%, 1/2W
R247, 248	340X3153-934	15k Ohm, 5%, 1/2W
R249, 275	340X3103-944	10k Ohm, 10%, 1/2W
R250	340X3822-944	8.2k Ohm, 10%, 1/2W
R251	340X3684-944	680k Ohm, 10%, 1/2W
R252	340X3564-944	560k Ohm, 10%, 1/2W
R253, 276	340X3274-944	270k Ohm, 10%, 1/2W
R254	340X3562-944	5.6k Ohm, 10%, 1/2W
R258	340X3224-944	220k Ohm, 10%, 1/2W
★R261	340X5150-843	15 Ohm, 10%, 2.0W
R262, 264	340X3824-934	820K Ohm, 5%, 1/2W
R265	340X3185-944	1.8M Ohm, 10%, 1/2W
R267, 268	340X3010-934	1 Ohm, 5%, 1/2W
R269	340X4392-843	3.9K Ohm, 10%, 1/2W
R270	340X3471-934	470 Ohm, 5%, 1/2W
R272	340X3475-944	4.7M Ohm, 10%, 1/2W
R273	340X3155-944	1.5M Ohm, 10%, 1/2W
★R274	340X4473-843	47k Ohm, 10%, 1.0W
R277	340X3033-934	3.3 Ohm, 5%, 1/2W

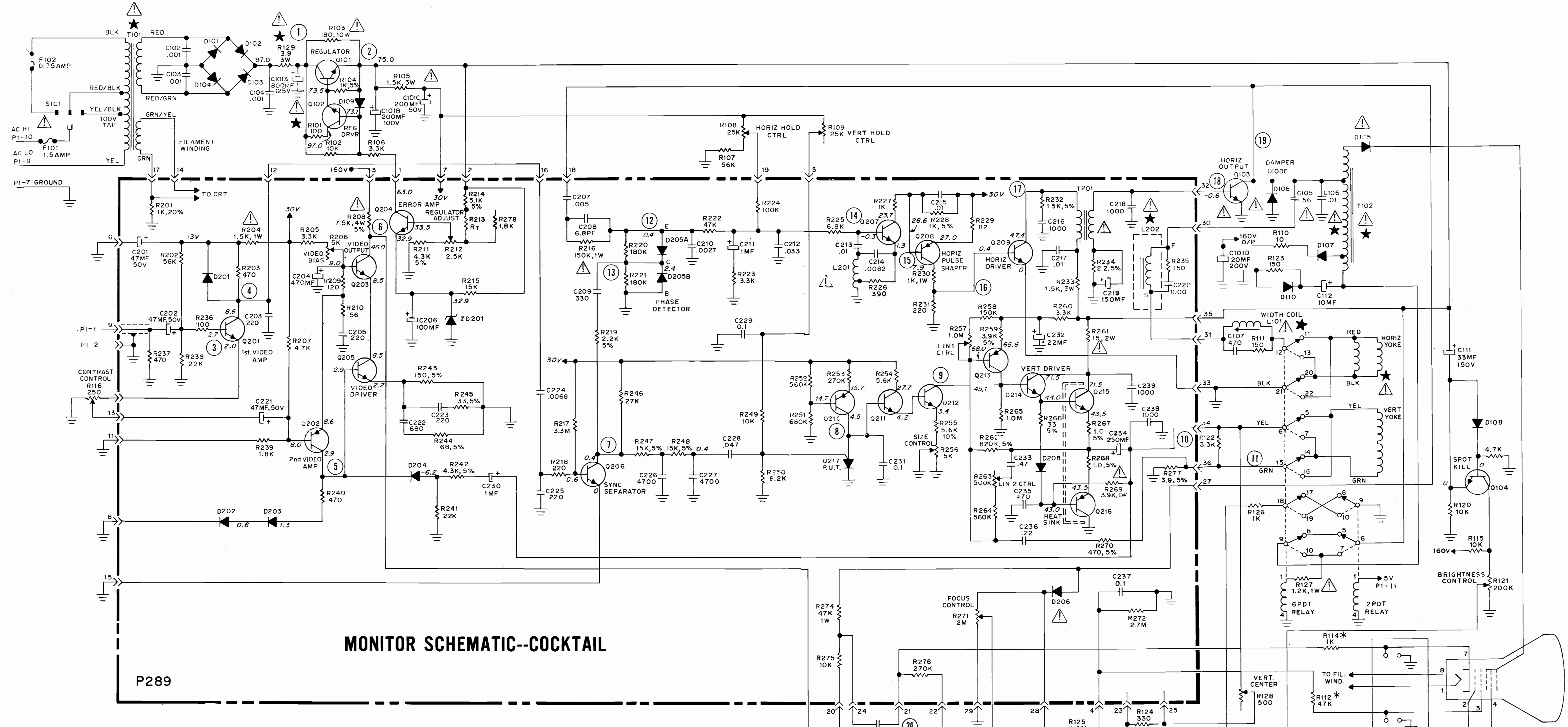
SEMICONDUCTORS

D201, 202, 203, 204, 207, 208	66X0046-001	Diode, Silicon FDH444
D205A, 205B	66X0066-001	Diode, Dual, MSD6102
D206	66X0054-002	Diode, RCA D2102SF
Q201, 205, 206	86X0113-001	Transistor (NPN) 2N3904
Q202, 208	86X0114-001	Transistor (PNP) 2N3906
Q203	86X0071-001	Transistor (NPN)
Q204, 212	86X0071-001	Transistor (NPN) MPSA06
Q207, 211	86X0058-002	Transistor (NPN) MPSA20
Q209	86X0116-001	Transistor Horiz. Driver (NPN) 2N6557
Q210	86X0066-001	Transistor (PNP) MPSA70
Q213	86X0072-001	Transistor (PNP) MPSA56
Q214	86X0073-001	Transistor (NPN) MPSU07
Q215	86X0074-001	Transistor (NPN) 2N5192
Q216	86X0075-001	Transistor (PNP) 2N5195
Q217	86X0070-001	Transistor (P.U.T.) MPU131
ZD201	66X0040-004	Diode, Zener 31V

MISCELLANEOUS

	38A5395-000	Pix Socket & Connector Assy.

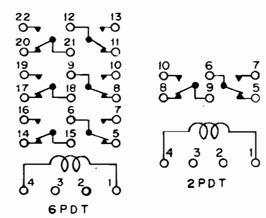
WGEC 69X0715-100
3-78



NOTES:

1. VOLTAGE MAY VARY WITH CONTROL SETTING.
2. LINE VOLTAGE MAINTAINED AT 120VAC, 50/60Hz.
3. ALL D.C. VOLTAGES ±10% MEASURED FROM POINT INDICATED TO CHASSIS USING HIGH IMPEDANCE METER WITH NO SIGNAL INPUT. CONTRAST AND BRIGHTNESS CONTROLS AT MAXIMUM; ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.
4. ◯ –WITH INTERNAL NUMBER INDICATES LOCATION OF WAVE FORM READING.
5. ✱ –INDICATES RESISTORS LOCATED IN PICTURE TUBE LEAD ASSEMBLY.
6. RESISTANCE VALUES IN OHMS, 1/2 WATT, 10% UNLESS OTHERWISE NOTED. K=1,000 M=1,000,000
7. CAPACITANCE VALUES OF 1 OR LESS ARE IN MICROFARADS; ABOVE 1 IN PICOFARADS UNLESS OTHERWISE NOTED.
8. PRODUCT SAFETY NOTICE: PARTS IDENTIFIED BY SHADING ARE SAFETY CRITICAL COMPONENTS. REPLACE ONLY WITH SAME TYPE PARTS SHOWN IN PARTS LIST.

RELAY WIRING DIAGRAMS



PRODUCT SAFETY NOTICE:

PARTS IDENTIFIED BY SHADING AND BY ⚠ ARE SAFETY CRITICAL COMPONENTS. REPLACE ONLY WITH SAME TYPE PARTS SHOWN IN PARTS LISTS.

★ X-RAY RADIATION RELATED PARTS FOR REPLACEMENT PURPOSES. USE ONLY TYPE PARTS SHOWN IN PARTS LIST.

V1002-5770

WELLS – GARDNER ELECTRONICS
CORPORATION
2701 N. KILDARE AVE. • CHICAGO, ILL. 60639 • ALBANY 2-8220

NOTES

This space is provided for personal notes

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FORM-0870-00300-0000